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Edited by JOHN BARTLETT.

GENRE PHOTOGRAPHY.

ONE great blessing the Dutch school, despite its vulgarity, conferred upon modern art, was the trumpet-like call it sent forth to bring back the painters of the seventeenth century from their inane wanderings in the realms of classic idealism.

Men had become subject to the dominancy of the classic pedantry. They had come to believe that nature was too crude for the purpose of art, human nature too commonplace to furnish themes for their canvas. The traditions of the past were held to be inviolable. There was no deviating a jot or tittle from the sacred laws of the fathers.

Nature was subordinated to man, while man was converted into a etherealized being, and placed in a paradise of dainty devices.

The Dutch painters, gross as they were sometimes, and sensual as were often their paintings, awakened men to an appreciation of the beauty of the world around them, and to a keen sense of the ridiculous condition into which art had fallen. Now the boorish Dutch painters seem to have cared nothing for motive in a picture. They wanted to paint, and they painted just what they saw about them, regardless whether its tendency was to morality or otherwise. They lived in very eventful times, and took a very lively part in the stirring incidents,—indeed, often a pathetic part. They were not wanting in spirit or courage, but they do not seem to have been inspired with any enthusiasm for depicting scenes of heroism or suffering. They preferred to paint servant maids engaged in menial services, or boors in the fields, or peasants carousing in front of an inn, or cows in the pasture, or market-women on the canals, passing by incidents rich in pathos, which would have aroused us to a high state of feeling. Yet they were conscientious in all that they did. They painted everything well. To them nothing was common or unclean. Their aim was low; their themes humble. Man was at first degraded because he had been unduly exalted. They were the first to direct humanity to the path which led to its proper place in nature.

The scenes and incidents of every-day life ought surely to afford scope enough for the photographer for the selection of suitable subjects.

Our domestic relations, if sincerely and honestly expressed, will embody the true principles of art more emphatically than all the subjects of melodramatic inflation which at our exhibitions so often disgust good taste.

Photography is too much subject to ridicule by the the injudicious attempts of those who imagine they are exalting its functions by their grandiose representations of what they choose to call poetic themes. They cannot soar into the empyrean while they carry so much that is earthly with them. It weighs them down, and they hang between heaven and the nether world in a very uncomfortable condition, till rescued by kind oblivion.

Let photography seek simple themes and render them simply. Our painters are content with the artistic aspects of our modern life. Let photographers possess themselves in patience for what they are able to do, but let them do it well.

The picture we present with the January number of the AMERICAN JOURNAL OF PHOTOGRAPHY has nothing of the sublime in the subject, nothing of the pathetic in its rendering, and yet it is pleasing, and therefore fulfils at least one of the demands of true art.

The old lady is comfortably seated reading her Bible,—perhaps the very chapter which speaks of the day of Pentecost. Her mind reverts to the glorious theme and she instinctively counts upon her fingers the oncoming of the day of its celebration.

The expression on the face is well rendered, showing that the interest of the subject and attitude were conceived without obtrusively conforming to the set principles of art composition.

We would like to call especial attention to the excellency of the process by which the photograph has been reproduced. The original negative is from a life study, taken in an enclosed place out of doors. There is not a particle of retouching upon any part of the plate. The plate employed was a Cramer 35 ; the lens a Ross-Rapid Symmetrical, with *f*-11 stop.

The reproduction is by the Ives process, as worked by Crosscup & West, of this city. The process plate, which was, we are assured, made without any re-etching, burnishing, rouletting, or retouching of any kind whatever, illustrates the wonderful degree of perfection now attained in the production of type blocks from photographic negatives. It also shows that the Crosscup & West Company, who have been engaged in the production of such plates longer than anybody else in the world, still stand in the front rank. They commenced in 1881, with Ives' patent process, the only successful method that was ever allowed a patent in this country, and adopted at the start substantially the same pattern of black cross-lines in the shadows and white cross-lines in the lights, which was afterwards adopted by Meisenbach in Europe, and finally by all successful process operators. The Crosscup & West Company operated this process exclusively until 1886, when Mr. Ives succeeded in applying his principle of a graduated line in a more direct way. In the early part of the year 1888, still further progress was made, and the Ives process of to-day is said to produce directly from the copy, by a single exposure, definite negatives with lines and dots as sharp and clean as are made from pen drawings, and graduated to reproduce the most delicate contrasts of light and shade. The plates are produced in hard rolled copper, making a perfect and very durable printing surrace.

The excellent presswork which secured us such beautiful prints is by Edward Stern & Co., Philadelphia.

SOME DEFECTS IN PHOTOGRAPHS CARICATURED.

OF the varied means that have been employed to correct failings, errors and weaknesses, there has perhaps been none more effective than caricature, or what the ancients might have called the *ridendo castigare mores*. The student of history, if his tastes are not too solid to prevent him, will, upon reading the history of caricature or of the grotesque as it appears in art, often see at a glance how the keen cautery of wit in word or in picture has, in many cases, done more to remove nuisances, and more to render what is bad detestable in the eyes of humanity, than the uttermost endeavors of able and talented men made in a serious manner.

We can easily understand that there are many who would never consent to regard caricatures as anything else than mere idle stuff, fit for nothing but to raise a momentary laugh and then to be cast aside. Too many, we regret to say, are indeed worthy only of being cast aside, and not even of having an honest laugh wasted upon them. Some also seem to substitute a painful amount of scurrility, unseemliness and lack of charity for the lively and good-natured wit which constitutes the main feature of a good caricature. Political caricatures of all classes and times of which we have reliable historical record, are alike in possessing these disagreeable qualities.

In calling our readers, attention to our illustrations, which, of course, speak for themselves, let us remind them that in the September and October issues of the AMERICAN JOURNAL OF PHOTOGRAPHY we entered at some length into the subject of "Perspective in Photography and the Use of Wide Angle Lenses." We quoted

cases that had unavoidably occurred in the practice of experienced operators of our acquaintance, where hideous distortions in portraiture, landscape and architecture had been caused by the use of wide-angle lenses. Sometimes the same effect had been brought about by there being too little space for the camera, or in other words, the lens had had to be set too close to the subject, and could not be retired to the proper distance. We also gave a list of the best distances to be kept between the lens and the sitter in the portrait gallery, and spoke of the customs observed by painters in the matter. In fact a considerable part of what we tried to impress upon our readers in the two papers on perspective, was simply to keep the camera well back from the subject, and then to use a lens of long enough focus to give an image of the desired size.

We need hardly say that before committing ourselves to write upon an important matter like this, we reviewed all the photographs we could lay our hands upon at the time, besides a much larger stock stored away in our recollection, and out of this mass of matter we had no difficulty whatever in finding plenty of examples of the faults alluded to. But shortly after the publication of our articles, we found in the *Fliegende Blätter*, a well-known German comic weekly, some caricatures on the very faults we had been speaking about, which seemed to us so much to the point, that we have had them reproduced, and give them to our readers to show them that these faults which have been noticed by our photographic journals over and over again, are yet so often seen and are so ridiculously false and bad, that standard papers outside of photographic circles, such as the *Fliegende Blätter*, have deemed them fit subjects for caricature and ridicule.

Even the makers of apparatus are waking up to the necessity of putting persons on their guard when they first take up the camera, especially if it is one mounted with a wide-angle lens. The manuals accompanying some of our popular detective cameras now have illustrated pages containing faithful transcripts of the enormities which are daily seen as the work of these clever instruments, and prove that if one tries to photograph a high church steeple from immediately across the way by pointing the camera up to include the top, he will obtain a picture rather more resembling one of the pyramids of Egypt than a Christian place of worship; or that if one photographs one's pet dog too close on, the resulting picture will resemble the long-drawn-out and extraordinary increase of distances spoken of by those who have taken large doses of Cannabis Indica or Hashisch.

That these caricatures in the *Fliegende Blätter*, which have been made in no unkindly spirit, have already worked for good in Germany we have no doubt. We give them to our readers as a pleasant means of clinching the nails we have been driving as regards the paramount importance of proper selection of the point of view and the lenses with which to make the picture.

ELLERSLIE WALLACE.

"LEIMTYPIE."

SOME really valuable inventions which originate in this country, even though they may be in successful practical operation for years, attract very little attention until they are copied or imitated by somebody across the Atlantic. A good illustration of this curious fact is to be found in the introduction of the Mumler process in Austria, by Husnik, who calls it "Leimtypie."

The two features of this process which are mentioned as most remarkable discoveries or inventions, and which appear to be claimed by Husnik, originated in this country, and have been operated extensively for years without, it appears, attracting enough attention to prevent them from being accepted in Europe as something entirely new. These features are described in a communication to the American Annual of Photography, 1888, p. 193, as follows: . . . . "By developing the chromated gelatine film with saturated solution of bi-chromate salts on the front side of the film, that is the side exposed to light, by wiping or rubbing it with cold solutions," etc.

"The fact of Husnik's developing the image with saturated solution of bi-chromate salts shows a new, heretofore not known, property of the chromates."

"A most remarkable novelty is the second development. First development is interrupted by Husnik before the finer details are touched [lost]; he then dries the film, covers its white portions or ground with printer's ink diluted with turpentine near to the [lines of the] drawing, and exposes a second time. The relief having taken up much chromate during developing, has not only become extremely light-sensitive, but the surface and sides of the lines have become much harder. The black ink having been removed, developing to any desired depth can be effected."

The method of development with cold bi-chromate solution may or may not have been published, I do not know; but it has been practiced for years in several establishments in this country, in the production of hundreds of thousands of these gelatine reliefs, and the knowledge of the method was communicated to at least one person in Austria. The double-printing method, which has also been in use here for more than ten years, was not only published long ago, but patented. The gelatine plates were also used to some extent for printing from direct, but for very good reasons, which have nothing to do with the manner of attaching them to the block, this plan was long ago abandoned here, as it probably soon will be in Europe.

Another equally important feature of this American process Husnik does not publish, but is no doubt ready to explain to those who pay him for the "right" to operate it.

F. E. IVES.

EDITORIAL NOTES.

PHOTOGRAPHIC ART AND PHOTOGRAPHIC TECHNIQUE.—If we are to take the judgment of some *soi disant* artists as the criterion for estimating the art values of a photograph, we must limit our inventory of qualities to an enumeration of the merits it possesses of a plentiful lack of technical excellencies.

How often do we hear a poor, flat, tame out-of-focus, and blurred photograph lauded to the seventh heaven of artistic beauty, which deserves to be speedily consigned to the malebolge of bad work, not so much for its sins of omission as for its

more grievous sins of commission, and all because the artist speaks well of it for its mere obedience to certain definite rules of composition. Really there cannot be complete divorce of art and technique in a picture without the destruction of beauty.

A slovenly, ill-colored method of printing eats like a canker the most glorious conception. In truth the thought had better never have been unfolded than to greet the eye in such a guise.

In photography, technique cries out even more vigorously for a recognition of its importance than in painting. The photographer cannot lay the flattering unction to his soul that he is an artist despite his want of skill in technique. He will not meet with recognition. If smudges of fog can give such delight to photographic artists, why need they immure themselves in their dark rooms, or stain their fingers with pyro when the imagination can gather as good food for thought from the graceful blurs and pleasing outlines made by spilled chemicals upon the walls of their laboratories? A feeling for art should ever be prominent in photography, but must not unduly exalt itself above technique.

THE CHARACTER OF THE MOUNT AS AFFECTING THE PERSPECTIVE OF THE PHOTOGRAPH.—By reason of a physiological peculiarity of the eye, or more properly by reason of an idiosyncrasy of judgment, we cannot estimate anything absolutely. We judge altogether by comparison. We have no idea of the size of a thing, but by relation to other things, and so of light and shade and color.

The lightness of tone of one certain object may be comparatively dark when placed in relation with the light of another object.

How often are our errors of judgment responsible for our mistakes in decision!

A piece of gray paper in the full blaze of the noonday sun is far more white in reality than the purest white sheet of paper in a dark corner. Yet we all unhesitatingly declare from *à priori* judgment, that the piece in the room is white and the piece outside gray.

Now this *à priori* judgment influences us in estimating photographic values.

An object of a certain tint always appears darker when placed in proximity to a much lighter object, and *vice versa*. If we take, for instance, a medium gray, and place it upon two different grounds,—one of which is lighter, the other darker, than the superimposed gray itself,—its appearance will be strikingly different in each case. Upon the lighter ground it will look much darker, while upon the ground darker than itself, it will seem much lighter in tone. Anyone can easily prove the truth of this by cutting two circles of the same gray piece, and placing them upon the two grounds. The different effect is so great that it is impossible to realize that both circles are identical in color, until we place them both on the same ground.

Now, this change of brightness by contrast with the ground is precisely what takes place, although the spectator is unconscious of the operation, when a certain tone of a photograph is brought into contrast with a mount darker or lighter than itself. Not only is the character of the photographic tone changed, but the whole perspective is really altered. We know this last remark will be challenged, but we think it may be practically demonstrated, as well as theoretically proved. We have

materially changed the character of the perspective by change of mount. For instance, in a landscape photograph, the distant mountains are rendered much lighter in tone than the foreground. Now it will be readily seen that this tone may be deepened or lowered by the juxtaposition of a mount whose tone is lighter or darker, and the distance will approach or retire accordingly.

When we look at an object we do not fix our eyes steadily upon any one part, but the vision wanders over the whole field. When we turn the eye from a dark surface to a light one, there is a superposition of impressions upon the retina; the light portion of the new impression, falling upon that part which had previously received the dark portion, is made more intense because that part of the retina is less wearied than the part acted upon by the light of the first impression. We have, perhaps, gone too far in the detail of the subject, but we were anxious to show that the character of the mount is not a question to be left to mere individual fancy.

WASHING, AND THE PERMANENCY OF PRINTS.—Now and again at our societies and elsewhere, the question crops up as to the permanency of photographic prints.

It is generally recommended as a means of prolonging their existence, to subject them to a most thorough washing, in order to eliminate the last traces of that persistent enemy of permanency—hyposulphite of soda.

Yet some claim, that in our intense desire to delay their time of falling into the sere and yellow leaf, we really accelerate their tendency to fade.

One thing is certain, that prolonged washing does not contribute anything to the brilliancy of silver albumen prints. On the contrary they frequently look wan and pale after a twenty-four hours deluge in the washing tank.

Bunsen proved that a chemical precipitate is thoroughly washed free of foreign impurities with twelve times its volume of water, the water being applied in small quantities at a time, and at short intervals.

Two or three hours of washing with frequent charges of water would therefore seem sufficient for paper prints. We do not give our gelatine negatives one-tenth the washing we make our paper prints undergo, although the persistency of the hyposulphite of soda in the gelatine film would seem to demand more thorough washing to ensure elimination of the dangerous salt. Our negatives seem to keep well enough with one or two hours washing in running waters. Bright, beautiful prints at any rate will repay us for any risk run from insufficient washing.

BUSINESS, AND SIZES OF PHOTOGRAPHS.—From the experience of photographers, who pursue the art solely for pecuniary interests, it would seem that the introduction of new forms and styles in photography, for the sake of increasing revenue, is not usually attended with the good results looked for.

Patrons become accustomed to a certain style and size of picture, say, for instance, the universal cabinet, and they are apt to regard it *per se* as the established and necessary form in which a photograph should present itself. Moreover, the makers of photographic albums adapt their sizes of books for holding the photographs to the standard popular size. Now if a photographer in order to attract cus-

tom to himself, or to draw it away from his rivals, conceives and introduces a novelty in shape of mount, photograph, etc., he disturbs the equanimity of the photographic public, distracts judgment, and makes people so undecided as to which is the most suitable to select from, that not infrequently they make no decision at all, and the order is lost. There is more danger attending the introduction of small sizes than follows the ushering of panels and other large sizes.

The trouble attending the finishing of the petite and mignonette styles, now seeking for popularity, is almost as great as that required for cabinets or boudoir styles. Indeed the mounting of these small sizes really requires more care, while the revenue derived from their sale is less than half that of the larger kinds.

The best plan would seem to be to keep to the cabinet, and to draw away custom from your rival by excelling him in good work and artistic taste.

ENLARGEMENTS OR DIRECT LARGE NEGATIVES.—How often do we hear the question asked, Do enlargements for small negatives translate the artistic qualities of the originals as well as direct large negatives? We are inclined to think that a direct large negative would render the half tones more beautifully than an enlargement from a small negative. In an enlargement the relation of the patches of light and shade is not by any means so harmonious as in a direct negative. There is always an unavoidable break, a falling off in the half-tones, so that up to a certain size it would be better to make direct negatives. But when large sizes are demanded the additional factors of increased expense of plate, camera, etc., enter into consideration, as well as the great increase in mechanical difficulties attending the production of large direct negatives.

Direct enlargements would require lenses of long foci to prevent distortion and to keep all the parts in relative sharpness, and failures to estimate the correct time count seriously when large plates are required.

Most excellent results in enlargements can be obtained by making an ordinary size negative; from which an enlarged positive is taken of the required size, and from this the desired negative for reproducing. The advantage of this plan is that the positive can be retouched, the imperfections removed or toned down, obscured parts sharpened, etc., so that the negative made from it by contact is greatly improved even over the original small negatives.

We have seen excellent work so made from small detective camera negatives.

RETOUCHING NEGATIVES BEFORE VARNISHING.—It is the habit of many photographers to varnish their gelatine negatives, before they are placed in the hands of the retoucher. We are assured by the declaration of many first-class retouchers that better results can be accomplished, with much less expenditure of labor, if the retouching is made upon the film before varnishing. They prefer applying the retouching fluid, and then working with the points directly, the elasticity of the gelatine facilitating the delicacy of touch, and the work progressing more rapidly. Moreover, it is possible to remove opaque spots and other unpleasant features in the negative, which could either not be effected upon the varnished surface, or only with the greatest difficulty and at great risk to the film.

MARKINGS ON GELATINE PLATES.—We have often thought that if it were not for the danger of breakage from transportation, the plan pursued by the manufacturers of dry plates of placing separators between the films, might be more honored in the breach than in the observance, inasmuch as the encroachment of the unsightly superscription, left by the undesired separator frequently mars so much of the space intended for the delineation of the picture itself that the impression is robbed of its proper tribute.

How often does the photographer find that the foreground is so much curtailed by these unsightly markings that the negative, if not worthless, loses much of its charm as a well-balanced picture.

We know how conscientious are the makers in selecting material for separators which is free from any substance which chemically affects the delicate film. This endeavor to better the state of affairs pursued some years ago, when any thing was thought good enough for separators, is very praiseworthy, but we would fain cry like Hamlet to the players, "Oh, reform it altogether."

From a few experiments we have made we are convinced that it matters not how pure the material may be which is employed as separators, these markings will persist.

We have made use of various substances which could not possibly chemically effect the plates. We cut out various designs and placed them in contact with the film, under slight pressure, for several months, and invariably obtained, upon development, indications of an action by the registry of the peculiar forms. The more sensitive the plate the more marked the impression.

We are all well acquainted with the early experiments of Hunt, Karsten and Moser in thermography, and the repetition of the same by recent experimentors. It would seem that the mere presence of a body, whatever its nature, has the power of producing an impression upon the delicate surface.

As it seems a difficult task to induce the manufacturer to abandon the pernicious plan of using separators, we think the best method to pursue, if we care about clean margins, is to unpack the plates upon receipt and repack them to suit ourselves, minus the obnoxious separators. Of course if the plates are obtained fresh from the hands of their maker, and are called into active service at once, the precaution need not be taken, but if a stock of plates is kept on hand by all means remove the intruders whose room is better than their company.

VIGNETTING LANDSCAPES.—If the construction of round and oval frames, and the stretching of the canvas thereon were as easy as the making of the conventional square-framed vehicle for painting, we think that artists would prefer expressing their ideas upon such receptacles.

Why should the conception be so abruptly limited by the four rigid containing lines? It is not so in nature. The vision is not bounded by any definite limitations, but gradually all around fades off into a pleasant indistinctness. Hard lines are always condemed by the art critics, yet they never seem to be annoyed much by these hardest of all possible lines. Our eyes are so enslaved with the bondage of the

square limitation that we prefer looking at a natural landscape through some such boundaries.

How often have we seen photographers in search of the picturesque, inventory certain definite particulars of a scene by means of the square separators which are employed by the dry plate makers to prevent the films coming in contact.

We remember a covered bridge, now removed, which crossed the Schuylkill river at one of its most beautiful turns; a square window in this bridge was the favorite resort of the lover of the beautiful, although a still more beautiful view could be obtained from the outside of the bridge. The mere charm of the limitations was a superadded attraction which outbalanced the loveliness of nature's unfixed and changing margins.

Photographers are the ever-ready slaves to the conventionalities of art. The square mount, with its rigid margins, is their special delight. But not content with this bondage they impose upon themselves additional servitude; lantern slide pictures must be constrained to fit the regulation size mat, no matter how great injury is done to the beauty of the scene.

If photographers only knew the charm given to a landscape by vignetting, we are sure the method would be more generally practiced.

Any one of taste will acknowledge that very often a well-chosen view loses all or more by paying too much rent for the hard, rigid lines of its surroundings. The vision comes to a sudden and always unpleasant stop when it reaches these barriers. How much more pleasant to allow the eye to wander off indefinitely, just as it does in an unconfined scene in nature. It is only because we are so accustomed to see a photographic picture set round by the angles and lines of the ground glass screen of the camera, and because, too, we think that we are conforming to the dicta of art, that we take it for granted that the parallelogram is the correct thing to chain up our conception of the beautiful.

Not only does vignetting landscapes add much to their æsthetic value, but it often improves an indifferent picture.

Sometimes unavoidable straight lines crop out prominently in a scene near the margin of the picture, such as a line of buildings, fences, etc. All such objectionable features can be kept from trespass by means of the vignetting device.

There is nothing difficult in the method of vignetting, but if the process were the most difficult it would more than repay by the beauties secured.

BRILLIANCY AND LARGE DIAPHRAGMS.—The laudable desire to secure sharpness and depth of focus sometimes leads the photographer to employ diaphragms for cutting down the aperture of the lens far beyond what is necessary for obtaining the wished-for result.

There is always a danger incurred of destroying the brilliancy of a photograph by the diminution of the aperture of the lens.

Brilliancy necessitates contrast, and contrast is destroyed if a small stop is used to correct some defect in the objective.

Anyone may be convinced of the effect of the stop upon the brilliancy of the impression by watching, upon the ground glass screen of the camera, the action pro-

duced by the introduction of stops successively diminishing in aperture. The quantity of the light is not only lessened, but the relation of its distribution is changed. The small stop is a great leveler and tones down the contrasts.

With a large stop there is a crispness and vigor which often compensates for the slight falling off or sharpness at the back of the head of a portrait; moreover the relation of the figure to the background is better brought out in relief.

A CAUSE OF BAD EXPRESSION IN PORTRAITS.—The pernicious plan of directing the sitter to fix the eyes upon a single spot somewhere in the line of vision, we are sorry to stay still has prevalence. It is one of the great factors which militate against the securing of that pleasing expression which the operator at the critical moment requests his victim to conjure up.

To fix the eyes intently, even for the brief time, demanded for an impression, is cause enough to produce a strained, drawn expression of the features, if not the look of agony in the countenance we so often see in portraits. Indeed, dizziness may often ensue, and with it many attendant evils. In some subjects a hypnotic state can be induced by a protracted gazing at a spot.

But aside from everything else, the great relief the mind as well as the body has when the eyes are allowed to pleasantly roam over a limited field, should be inducement enough to the operator to devise some scheme to rest the vision during the operation. A small picture, so placed that the attention of the sitter will be attracted by the subject or motive without causing motion, will reward the operator by the good result produced in the pleasing expression. The eyes take in quite a large angle of field without rolling, and if the objects upon which they gaze are of a pleasing character, the sitter is sure to forget that he is in the chair of torture, and there will be no need of the gentle admonition of the photographer: "Now then, look pleasantly."

THEATRICAL PHOTOGRAPHY.—The introduction of the magnesium flash-light has made the photographing of tableaux and theatrical scenes quite an easy accomplishment.

The extremely short duration of the exposure allows the characters to assume attitudes and poses which it would be impossible to maintain were the time prolonged even for a few seconds.

We were recently shown a number of photographs of ballet dancers, taken with Blitz-Pulver. The poses were most trying ones even for a trained actress to maintain, yet the figures were rendered most beautifully, without the slightest blur from motion. These excellent photographs were the work of Mr. W. H. Rau, of Philadelphia, who is very successful in photographing with the flash-light.

A few days ago we were called upon to photograph nine scenes of a play. To ensure complete lighting of so extended a field, we were obliged to make use of a device by which two simultaneous discharges of Blitz-Pulver could be made.

Two of the little instruments called ignitors were employed. The instrument is

so constructed that a gentle pressure of a bulb, connected by means of a tube with a blowpipe, forces a jet of flame upon the powder, effecting its instant ignition.

Connections were made, so that one pressure of the bulb would ignite simultaneously the two charges placed upon either side of the stage, and behind the flies to protect the lens from the glare. One charge was placed in advance of the other, to secure front as well as side illumination of the figures.

The results obtained were excellent.

STUDIO BACKGROUNDS AND HORIZON LINE. — The glaring incongruities of background and subject, which used to furnish a fertile theme for the scornful pen of the art critic, nowadays rarely excite our sense of the ridiculous.

This improvement in judgment, or rather appreciation of the eternal fitness of things, is to be ascribed to the improvement in education of the photographer effected by the publication, during the last quarter century, of so many good books on art in photography.

The landscape scenery now employed as a setting to the living subject often displays much taste and skill on the part of the scenic artist in the subordination of parts which would be too obtrusively rendered in the photograph. However, one does frequently see a wrong application of the background to the subject, not offensive in incongruity, but still annoying to the sense of those who have an intuitive or acquired understanding of the principles of artistic perspective. We refer particularly to the placing of the subject against the horizon line of the scene.

If the horizon of the background is placed for a certain size of figure, and the photographer poses his subject so that the line comes too far above or below the head, the whole picture is rendered ridiculous and impossible.

If the horizon is greatly depressed, the apparent greatness of the figure makes us tremble for the fate of the poor little houses or the pigmy sheep, lest, inadvertently, he or she should step back upon the Lilliputian world.

If the horizon is raised inordinately, we are inclined to fear lest the mountain crush our pigmy.

We might venture to suggest choosing the position of the horizon with regard to the height at which we place our camera,—that is, have it about on a line with the lens. Of course, our good judgment will dictate a slight deviation from the actual horizon if necessary.

Fortunately the indifference with which photographers regard the relation of horizon to subject does not often make the picture very glaring or offensive, because the horizon line in the background is generally softened to such a degree as to tone down its obtrusiveness in the resultant photograph, and generally it is well to have an indefinite horizon, but it is also well to have that horizon in accordance with the dictates of common sense.

NOW-A-DAYS it is a rare occurrence to meet with any demonstration of utter ignorance of the principles of photography. However, these rare occasions do sometimes present themselves, to the great delight of the initiated, who are not sufferers by the lack of knowledge.

Not long ago an amateur photographer, a member of a soldier company, anxious to show his skill, agreed to photograph his companions in a group and in full uniform, provided the attendant expenses should be paid by the company. He was directed to send the material, together with all bills, to the armory, that the charges might be made.

The clerk in charge, acting in full official capacity, on receipt of the articles examined each as he made the entry, until he came to the sealed package of plates. This looked too much like collusion to his astute sense, and he accordingly opened the box, in the full light of day, to see if the indication of the amount on the outside tallied with the amount within. He was satisfied, but it is needless to say the amateur next stepped in for his share of satisfaction.

Recently an auctioneer in offering for sale the sad memorials of some decayed amateur, opened the box of dry plates for the better displaying of the quality of the contents, at the same time descanting upon the excellency of the surface of the films.

THE PHOTOGRAPHIC SOCIETY OF PHILADELPHIA.

THE Annual Meeting of the Society was held Wednesday evening, January 2d, 1889, the president, Mr. Frederic Graff, in the chair.

The Annual Report of the Treasurer was presented and ordered to be filed.

The Executive Committee made their Annual Report, reciting the principal events of interest in the history of the Society for the past year.

One of their first duties had been to arrange for the removal from the former cramped quarters of the Society to the new room now occupied, where the first meeting, with an attendance of seventy, was held on April 4th.

The average attendance for the ten stated meetings during the year was forty-six.

A list of books and journals added to the library was submitted, special mention being made of the donation from Mr. F. De B. Richards, which puts the Society in possession of a valuable stock of the older and rarer literature of Photography, and of the gift made by Mr. George W. Childs, of Muybridge's valuable Atlas of Animal Locomotion.

In the early part of the year (Jan. 11th) a public Lantern Exhibition was held. Technically the display was certainly a very successful one, and resulted profitably to the Society.

Under the management of the American Lantern Slide Interchange, slides have been received for exhibition from New York, Pittsburg, Louisville and New Orleans, Philadelphia Amateur Photographic Club, St. Louis, Chicago and Cincinnati.

The annual distribution of Presentation Prints took place last Fall, and while this is a custom that may be valued by some, the committee called attention to the fact that to maintain it costs about one-sixth as much as the annual rent paid by the Society, and the considerable sum thus spent supplies the members with an article of which photographers not infrequently have a superfluity. The suggestion was made that if any prescribed number (say four or six) of the best pictures produced by members within each year, were selected by a committee and were at proper intervals bound and preserved, the Society would have a valuable record of work done, and members would have quite as much of an incentive to good work as is now offered by the presentation Print scheme.

Reference was made to the sudden death, on June 13th, of Mr. S. Fisher Corlies, a most genial and popular member, who had long served the Society as Treasurer, doing it, as he did all things, well and thoroughly.

The Active and Life Membership, December 31st, was reported as 182.

During the year 36 new members had been elected. There had been 5 resignations and 1 death, making a net increase of 30 members.

The Joint Exhibition Committee announced that arrangements had been made for holding the Third Annual Joint Exhibition at the Penna. Academy of the Fine Arts during the two weeks beginning April 8th. Probably three or four evenings would be devoted to the display of lantern slides. Circulars with full particulars would be issued about January 15th.

Mr. Wm. H. Rau, for the American Lantern Slide Interchange, announced that slides from Louisville and New Orleans would be shown at the Conversational Meeting, January 16th.

The Committee on Membership reported the election of the following active members:

Eckley B. Coxe, Jr., Percy S. Marcellus, James W. Torrey, Winfield S. Clow, H. A. North, Charles M. Cresson, M.D., Herbert Harker, George A. Dunning, Theodore H. Lüders, George McClellan, M.D., Walter H. Brand.

The Election for Officers and Committees for 1889 resulted as follows;

President, Frederic Graff.

Vice-Presidents, John G. Bullock, Joseph H. Burroughs.

Secretary, Robert S. Redfield.

Treasurer, Samuel M. Fox.

Executive Committee, Dr. Herbert M. Howe, Dr. Ellerslie Wallace, William A. Dripps.

Excursion Committee, Samuel Sartain, John Carbutt, W. D. H. Wilson.

Committee on Membership, Henry T. Coates, John Bartlett, George Vaux, Jr., David Pepper, Edward W. Keene, Joseph H. Burroughs, Dr. Charles L. Mitchell, Frank Bement, W. H. Walmsley.

Committee on Revision of Minutes and Articles for Publication, John C. Browne, John G. Bullock, Robert S. Redfield.

Committee on Lantern Slides (three to be elected), Edmund Stirling, Frank Bement, William H. Rau.

The President in accepting the chair for the year 1889, made the following remarks:

"I assure you I most highly appreciate the honor you have conferred by again electing me to preside over the affairs of the Photographic Society, in which I have been so long and deeply interested.

"I take great pleasure in congratulating you upon the prosperity of the Society, and that it so ably maintains its reputation and influence in advancing the interest now so general in the useful, instructive and pleasurable pursuit we are all engaged in.

"The reports of our Executive Committee and officers are so full of details that nothing more is left in that direction for me to say.

"We certainly have reason to feel proud of the papers read, and of the work of our members from time to time exhibited.

"I feel quite satisfied that in the high character of the specimens shown here of lantern slides, negatives and prints, it is evident that we not only hold our own but steadily improve.

"I desire particularly to call attention to the exhibition about to be held jointly with the "Boston Camera Club," and the "Society of Amateur Photographers of New York," at the Academy of Fine Arts, commencing April 8th, 1889, and sincerely hope that the members will use all their efforts to make the exhibition an eminently creditable one, even more so than that held three years since at the same place.

"I will not detain you by any attempt to recapitulate the new processes that have been brought forward during the past year. This is done so fully in the many Journals now published, to be found upon our library table, that I should only repeat, probably with fewer details and less instruction, what they have already said.

"I think we have every reason to look forward to a year even more full of improvement than the past, which while it has not been remarkable perhaps for any very startling new methods, has most certainly brought forth many valuable improvements on old ones. The introduction of new supports for the sensitive medium as substitutes for glass, increased sensitiveness of films, and more portable apparatus, has added to the facility of working, and given renewed inducement for amateurs to indulge in photography as a study and amusement.

"I believe all have been pleased with the neat and comfortable room we now occupy. It is however quite evident, from the rapid and gratifying increase in our membership, that before the year expires we shall probably have outgrown the limits of our present desirable quarters.

"I cannot close without referring to the great loss sustained by the Society in the death of Mr. S. Fisher Corlies. You all knew the deep interest that he took in our welfare; how he was always ready to help those not so fully educated to the work as himself, and how as a warm friend and companion we must miss him and mourn his loss.

"I most sincerely hope that the year 1889 will be to all of you one full of success and prosperity."

Mr. Edmund Stirling presented as supplementary to Mr. Childs' recent gift, a book entitled "Animal Locomotion," "The Muybridge Work at the University of Pennsylvania; the Method and the Result," which was accepted with a vote of thanks.

Mr. Bartlett exhibited several photographs which were interesting from a historical point of view, the property of Mr. Julius F. Sachse, of Philadelphia. They were the work of Mr. Langenheim, one of the pioneers in American photography, and antedated the days of collodion. The impressions, which date about 1850, were made from silver albumen glass negatives upon plain paper, without toning, and represented a portrait of Mr. Langenheim, one of Pres. Fillmore, a view of the treasury building at Washington, and what seemed to be an instantaneous view of Niagara Falls with natural clouds.

The first attempts at negative retouching were apparent, and the importance of the process indicated by the signatures of the retoucher appearing on the prints.

Adjourned.

ROBERT S. REDFIELD,
Secretary.

ART CULTURE IN PHOTOGRAPHY.

(Paper read by Mr. Lake Price, on Thursday, Nov. 8; London Camera Club.)

MR. CHAIRMAN AND GENTLEMEN:—I have very great pleasure in calling your attention, on this occasion, to the principles of art. In photography, as in art, the ultimate result is the picture; and in proportion as it fulfils the observance of correct art principles will be the agreeable impression it makes on the beholder. I shall have particular reference to make to figure work in photography. The painter can always omit or displace whatever displeases him; and, according to his knowledge of his art, so is the perfection of the result. In photography the power of color is denied us; but, in some branches of art, the figure notably, the same power of arrangement and composition is possible to the camera as to the palette. There is the subject,—the model is before us, as before the painter. If we do not make an equally effective composition the fault lies in our want of culture, in our inability to appreciate and see as he sees. Remember that photography, if weaker in some points, has one immense advantage over delineation by hand; it alone possesses the power of fixing, in a second or two, the homogeneous light and shade on a subject; indeed, the complete representation of it at one stroke. This alone is a great point in the art-science. Then it has the power of imitation of textures in a manner and with a facility which is not common in art, and which only the works of Meissonier amongst moderns and Metzer and Jerburg amongst the older painters possess in perfection.

It must not be a discouragement that photography is debarred from delineating subjects of a highly imaginative kind—say the representation of Paolo and Francesca in the "Inferno" of Dante, *inter alia*—enough and to spare remain of a homelier class, which, if well treated, will be certain to receive merited appreciation. But mere mechanism will not suffice; it will not even be enough that the balance of lines and effective chiaroscuro are correct; there must be a motive, a pathos, a sentiment infused into the picture. There are four leading qualities in art—linear composition, chiaroscuro, color, and, chief, of all, mind.

Color we must omit, but the remaining three are amongst the capabilities of photography, and should be sought to be realized in the picture in as much perfection as possible. In order to study the excellences of the great masters in painting, we have their practice—as shown in their works—alone to refer to. We have no documents in which they give rules for us to go by. They were probably too much occupied in the practice of their art to discuss or record the means whereby.

Whether in the pictures of the Italian or Spanish schools, certain points always are found to obtain. The figures making up the subject face inwards, towards the action depicted, and the regards of the actors in the scene turn inwards, as if engrossed in it, generally with the notable exception of one, or, at most, two, faces intently and expressionally directed out of the canvas at the spectator, the effect being that he, personally, is, as it were, "taken *into* the picture." I could cite a host of examples on this point. So that we see the dictum—a very judicious one—not to let the sitters in a group stare at the camera must be taken *cum grano*.

In regard to the balance of lines, the feeling I have is that the lines of the composition should *equalize* each other in whatever direction they may primarily occur. This antagonism or balance may be studied in the finest pictures in the world. In

the "Last Communion of St. Jerome," by Domenichino, in the Vatican, the line formed by the figure of the dying anchorite is immediately replied to by that of the ministering priest, who bends over to receive him. Examples *ad infinitum* could be quoted.

Of course there are exceptions to "the actors in the scene facing inwards towards the centre." These occur when the *action* of the picture depicts a passage *from* it, which sentiment would be neutralized by the movement being, as it were, arrested by figures meeting it. But here also harmonious balance of lines should be re-established, or a most disagreeable "tumble-down" effect would be seen. For instance, in that most magnificent picture, by Rubens, in the Louvre—"Lot and his Family being driven out of Sodom"—the *action* is given by the propelling angels, but the great artist, in the two reluctant and withholding figures of Lot and of his wife, not only re-establishes complete balance, but also intensifies the pathos. Endless examples could be quoted.

Probably, although a modern, no picture more completely tells its story than "the Death of General Wolfe," by Benjamin West, now almost forgotten. There is a swing of the pendulum in these matters. Now we are in the Romantics, with knights in armor and ladies fair, and we swear by Maclise; anon we loathe the Mediæval, and swear by the Classic and Alma Tadema. The same holds good in France. There David is the oracle, displaced anon by the Romanticists, Garicauts, Bonington, etc. This is not right; there should be no such thing as "fashion in art." "A thing of beauty" should be "a joy forever." To return to the death of Wolfe. The dying hero lies prostrate: the lines of his figure are replied to by those of the advancing figures pointing backwards to the enemy, "They run, they run;" whilst the animated postures of the excited assistants are admirably emphasized by the impassive figure of the stoical red warrior keenly watching how the white chief will meet his end. Nothing in art has been done better in its way.

Let me incite you to study the best examples in art. Aim high. The effect of such study will be perfectly felt if only a single peasant figure has to be treated. Look at the nobility of pose instilled by Leopold Robert into the "Contadino" leaning on the buffalo, in his picture of "Les Moissonneurs," and that without the slightest attempt at *over*-refining him. He remains eminently the real peasant.

It might be supposed that what has been here advanced as to the harmonious balance of lines in composition would be liable to force itself on the spectator as a pragmatical and mechanical arrangement. It is not so. He remains perfectly unconscious of any such technicalities, but if the linear composition of many figures is unskilful, without knowing why, he is dissatisfied with the "muddle" into which the whole is thrown, and the want of simple and effective telling of the story.

The most humble materials, properly worked, suffice to make fine pictures. Most of you must be familiar with the Beggar Boys of Seville, painted by Murillo. Nearer home, and more recent, there was a picture in this year's Royal Academy which touched the sympathy of many. The materials were of the humblest. A poor, bare room in a squalid cottage. Two figures, one of which any charwoman could have represented, the other any commonplace girl; a deal table, an expiring candle, as accessories. Out of such unpromising material Mr. Bramley constructs a picture, which he calls "The Hopeless Dawn," full of feeling and pathos.

The two women are worn out with watching for the return of the fisherman-husband of the younger, whom, presumably, they are fated never to see again, and the younger has, in her despair, flung herself across the lap of the elder. Here was nothing that, with the necessary talent, the camera could not have successfully treated. Why is it that we never see such work in photography? In portraiture we should have made greater advances than are generally seen. The hands, which, next to the head, the "old masters" always studied with affectionate care, seem by the modern photographer to be most sedulously avoided. I have even seen examples in which some plant, or other object, has been purposely placed to hide them, as though they were an absolute indecency! It may be difficult to treat the hands in photography, but if not difficult there would be no merit in success, and no really fine portrait is complete without well-treated hands. In Titian and in Velasquez they are placed most naturally and most simply—absolutely as they might occur in nature. In Vandyke they are beautifully painted, but there is a certain affectation in the pose of them which subsequently culminated in the portraits of Lely. In photographic portraiture what should be looked for should be the most absolute absence of all effort and all affectation—simple and skilful rendering of the person.

If the light and reflections be properly managed, and the exposure correct, thereby avoiding crude, heavy markings, nothing can exceed the beauty and character of Nature's own drawing. I regret to see that, in deference to a sort of "servant-gal" taste, a parcel of ignoramuses, with no knowledge of drawing or of art, occupy themselves in "retouching"—*i.e.* wiping out the beauty and character of Nature—and reducing the human face to a mere wax-doll or turnip. I hope that better things are in store, and that the fig-leaf may not be considered necessary to hide those peccant members—the hands. We should do well to remember that some of the finest portraits by the great masters were from originals by no means distinguished by their good looks; and we should endeavor to emulate them by giving artistic interest to the most homely models.

"Light and shade" are of the highest importance in art. By the skilful treatment of it the artist emphasizes the interesting points of his subjects, and subdues those whose prominence would be detrimental. In photography "light and shade" are too frequently rendered by black and white. Now, in a variety of ways it is much more incumbent on photography than it is even on art to render the whole range of tones, from the most delicate markings on white textures, passing through the entire range of half-tones down to the deepest black; intensifying the latter by the immediate juxtaposition of the high lights on polished surfaces, mirrors, armor, etc. This—from the earliest time—has been seen in the practice of the great painters; Giorgione, Titiani, Rembrandt, furnish us with examples. Endless variety in arrangement can be successfully practiced. The points most to be noticed are that the light should not be a mere spot in the centre,of the picture, but that it should enter and leave it as though part and parcel of a larger and outer expanse. Crossing the subject in a diagonal is much better than passing through it either vertically or laterally. Power will be gained by bringing the highest light and deepest black in juxtaposition, but inroads, as it were, should be made of light tones into dark and dark into light in their passage through the subject. "Spottiness," *i.e.* light forms of small size, disconnected with half-tones, upon dark, are inartistic. The whole system

of light and shade in the subject should lead from one tone to another, and not be isolated.

Photography, especially, requires a considerable attention to the half-tones in the picture; nothing is more fatal than the predominance of court-plaster in the subject, and yet that is the general effect of a large collection of photographs, when seen at a distance. It is singular that "luminosity" is so rare a quality in the "drawing by light."

There is one subject which, before concluding, I must touch upon, as it is one which might lead to marvelous results. It is that an organized study of figure-work should be established. Many here are skilful manipulators, and, with the present advanced processes, the facilities in every way are great. The practice of such study would not be expensive, a large room, with bare walls and floor, perfectly sufficing as the studio. Start with the single figure; let it be arranged by various members in turn, according to their tastes and opportunities. The Classic, the Mediæval, the Rustic, etc., etc., would be seen in refreshing variety; nay, even the commonest London "street-boy," properly posed and lighted, would be an interesting study. Painters from such models have to work away for several hours to obtain a result, but there are many here who at one immediate exposure could get a finished study. By moving the illuminator varied effects of light and shade on the same figure could be arranged, and fixed for subsequent comparison and improving study. Be assured that many artists would be greatly interested in the result. It would astonish many amongst the amateurs of art both here and abroad, and would be a revelation to many in regard to the capabilities of the camera in the direction of artistically-arranged figure-work.

ON FIGURES PRODUCED BY ELECTRIC ACTION ON PHOTOGRAPHIC DRY PLATES.

WHILE photographing the electric discharge from an induction-coil it occurred to me to try what effect would be produced on the plate by the discharge when taking place directly on the *sensitive film* itself.

A rather rapid photographic dry plate was laid film upwards on a piece of sheet metal connected to one terminal of the secondary, whose ordinary discharging points were set about 3 centim. apart to act as a by-pass to the spark and prevent it striking over the edge of the plate. The end of a wire from the other terminal rested on the centre of the film. A single discharge from the coil was caused by moving its mercury-break by hand, and the plate was then placed in the developer.

When the terminal wire at the centre of the plate was negative, and particularly if no discharge passed over the edge of the plate, the result was in the form of beautiful, sharply-defined, symmetrical palm-like fronds on irregular stems branching out from the centre where the wire rested, together with a mass of less distinct irregular straggling lines also branching outwards, but not reaching so far as the fronds.

When the wire terminal was made positive, and a discharge caused under otherwise precisely similar conditions, the figure was quite different, and consisted on the plate of dark irregular branchings, sharply defined except near the centre, where apparently the luminosity of the spark had caused a nebulous edge to the branch.

These branchings are accompanied by light, irregular straggling radiations, similar to those on the negative plate, but having a rather more distinctly centrifugal direction, and extending beyond the well-defined branches, from which they seem to be to some extent off-shoots. The experiments were repeated several times, and gave similar characteristic results. If, however, the metal sheet were omitted, and wires from both positive and negative terminals brought down on a plate insulated on a paraffin block, neither the palm-fronds on the negative, nor the dark markings on the positive, appeared, but only the lighter irregular branchings, and these were in much greater quantity round the positive terminal than at the negative; but with the poles not too far apart they stretched across from one to the other in the form of confused and irregular lines of flow.

When the plate was laid as before on a metal sheet, and wires from both positive and negative terminals brought down on the film, a discharge produced the characteristic figures under their respective wires. These were best defined only when no spark discharge crossed between the wires on the plate; and there was in this case no branching out of the positive and negative markings towards each other, the inductive circuit sensibly completing itself through the metal sheet under the plate.

When the difference of potential was made sufficient to produce spark-discharge between the terminals on the plate, the resulting marking depended in several respects on the presence or absence of a metal sheet under the plate.

With no metal sheet, and the plate insulated on a block of paraffin, the discharge took a fairly direct course between the terminals, with only slight crookedness, but sometimes in a double line. On this plate the characteristic palm-fronds of the negative and dark branchings of the positive pole are wanting, and the lighter tracery forms a rough indication of confused lines of flow between the poles.

With a sheet of foil pasted on the back of the plate (leaving a margin of about 2 centim. round the edge) and spark-discharge between the terminals, there is exceedingly little, if any, distinct tendency of the positive and negative markings towards each other. The track of the main spark is very crooked, meandering over the plate in a quite irregular way, and making sometimes sharp distinct angles in its course. From about half of its length from each end, but principally from the terminals, branch off here and there the characteristic positive or negative markings.

When a strip only of foil was fixed on the back of the plate so that its length crossed the line joining the poles at an angle of about 45°, and about twenty sparks were passed, they all took a similar S-shaped course, having been apparently attracted out of the direct line to follow that of the foil underneath the glass.

The meandering form and general appearance of these sparks, when acted on inductively by the foil under the plates, remind one very much of certain kinds of lightning-flashes, and suggest at least a possibility of some similarity in the causes producing each.

The question now arose as to whether the result was due to a photographic effect of the luminosity of the spark, or to some more direct action of the discharge on the film—to what might be called an "electrographic" action.

As evidence for the latter view came the apparent insufficiency of the light, actually visible when the discharge took place, to produce the effect. The lighter

branchings were not to me visible at all in either positive or negative, and only an indication of the frond formations in the negative.

There are also in one of the positive plates several intervals, as if the spark had not been in immediate contact with the film, but had passed over it, leaving only a foggy mark instead of a sharply-defined black line. The break or interval would scarcely have been so marked if the whole effect were photographic only.

However, to further investigate this question the discharge was taken with the two terminals on the back or uncoated side of the plate. The figures which now appeared on the film were quite different from those described above. In each case there was impressed on the *back* of the film (next the glass) the cloudy photographic effect of the branching discharge on the back of the plate.

On the front or outer side of the film under the positive terminal the figure reminded one of a photograph of a maiden-hair fern out of focus. That under the negative is a collection of peculiar tadpole-like markings, whose general arrangements correspond in size and shape to the fronds formed by the discharge on the back of plate. These figures would appear to be due to electricity induced in the film.

To try further the effect of induction on the film, I cut my initials in tin-foil after the manner of a stencil plate, placed the foil on the film, a piece of gutta-percha tissue on the foil, and pressed all together in an ordinary photographic printing frame. A second piece of foil was placed on the back of the plate, leaving a margin all round, and the foils were joined to opposite poles of the coil, with its terminals giving a by-pass of about 1 centim., so as not to have any spark discharge over the plate. The result with the poles connected in either sense, and the coil working for about a minute was, with the stencil foil either positive or negative, an irregular blackening all round the edge of the foil, including the edges of the cut-out parts, as if a discharge had passed out from the edges. In some places the characteristic markings of positive or negative, as the case might be, were visible. There was, however, a slight visible discharge from the edge of the foil on the back of the plate, and probably therefore the same from that on the film, to which the edge-marking may be due. There was also on the plate much blotchy marking, apparently corresponding to the wrinkling of the foil in contact with the film.

With a piece of gutta-percha tissue between the stencil-plate foil and the film, the result was similar, only the line round the edges was narrower and the blotching less marked, hence the initials came out more distinctly. When four thicknesses of gutta-percha were interposed, there appeared only blotchy markings on the part under the foil.

These results would go to show that actual disruptive discharge over or in the film is not needed to produce an effect visible on development, but that the figures are produced partly at least by direct electric action on the sensitive film without the intervention of a visibly luminous action, or what would be usually understood as a purely photo-chemical cause. Possibly further investigation may show that we have here a new kind of experimental evidence on the relation of electricity to light.

I may add that it is necessary, especially in the experiments with the terminals on the back of the plate, to use rather sensitive plates; "60 times" plates do very well, while slow plates give imperfect figures in all cases, and show almost nothing with the terminals on the back.—*London Philosophical Magazine.* J. BROWN.

THE PHOTOGRAPHER AND HIS SITTER.

(*From the London Times.*)

THE judgment delivered yesterday by Mr. Justice North, in the case of "Pollard and wife *vs.* The Photographic Company," not only settles, for the present at least, an important point of law concerning which much difference of opinion has existed, but also settles it in a manner in harmony with common sense and with the manifest rights and convenience of the public.

It was shown by the evidence that Mrs. Pollard, the plaintiff, went to the defendant, who, under the style of a company, carries on business as a photographer at Rochester, and employed him to take photographs of herself and of members of her family, giving an order for the execution of which she paid £7 10s. It is fair to assume that the photograph of Mrs. Pollard was an exceptionally pleasing picture; for the defendant, after having delivered to her the number of prints agreed upon, appears not only to have kept ordinary copies in his shop for sale, but also to have prepared and placed in his window special copies, decorated above and below the figure with what Mr. Justice North described as "scrolls of what I suppose are intended for leaves, with the superscription, also in leafy letters, of the words 'A Merry Christmas and a Happy New Year.'" It further appears from the judgment that this step was taken without any license or consent from, and without the knowledge of, the plaintiffs, who had never authorized the use of the photograph by the defendant in any manner, much less its public exhibition or sale for profit as a Christmas card. Mr. and Mrs. Pollard were, not unnaturally, much annoyed at the use made of her portrait, and instructed their solicitor to take proceedings to prevent it from being either sold or exposed for sale. His clerk, Mr. Andrews, went to the establishment of the defendant to purchase a copy; and there was some conflict of evidence between him and the defendant's manager, Mr. Bax, as to the conversation which passed on the occasion, Mr. Bax alleging that he refused to sell the Christmas card until he had ascertained that Mr. Andrews had received from Mrs. Pollard permission to purchase it, and alleging that the card was not exhibited for sale, but only as a specimen of the way in which portraits might be treated for the requirements of the season. The difference was not material; since the defendant's counsel contended that the negative was the absolute property of the defendant, and that he could use it or print from it as he liked, providing he did nothing which was in itself unlawful; such, for example, as making it a means of libeling the original of the portrait. The decision was given on this point, and, although the case came before the Court only on a motion for an interim injunction to restrain the defendant from further exhibition or sale of the picture pending the trial, the hearing of this motion was by consent treated as a trial, and a perpetual injunction was granted in the terms asked for, Mr. Justice North pronouncing the defendant to be "wholly in the wrong."

The question is one which has long been in dispute, and the view put forward on the part of the defendant has been upheld and acted upon by many photographers. We think it is a matter for congratulation that it can no longer be maintained.

The basis of Mr. Justice North's decision was the general principle which precludes a person in confidential employment from disclosing knowledge of which, by means of his employment, he has become possessed. A person cannot be photo-

graphed and supplied with printed copies except by enabling the photographer to obtain a negative, which must be left in his hands, in order that the prints may be taken, and which is, there seems no doubt, his property. It is made with his materials, and by the application of his skill and knowledge, and is therefore his own; but his use of it is restrained by the rights of the sitter, somewhat in the same way that a letter, as far as the paper and writing are concerned, is the property of the receiver, who, nevertheless, is restrained from publishing it without the consent of the writer. The decision appears to apply only to cases in which the sitter has ordered photographs in the customary way of business, and not to the numerous instances in which persons of celebrity have been invited by photographers to sit to them, evidently in order that the resulting portraits may be sold. In such cases there would be an implied understanding that the transaction was not a private one, and that there would be no grievance as long as the prints were properly taken, and as long as the sale was conducted in a proper manner. But we remember to have heard of an instance in which a person of note, whose profession implied seriousness, was much hurt at seeing his photograph displayed in a shop window as the centre of a sort of star formed by the photographs of slenderly-attired ballet girls,—a display for which it was at the time asserted that he had no remedy. We confess that we should not bestow much sympathy upon the woes of sitters who had accepted the invitations of touting photographers, and whose evident desire it had been that their portraits should be easily accessible to the members of some audience, congregation or *clientèle*. If such persons occasionally fall into bad company, they only reap what they have sown, and pay the penalty which, one way or another, often attends upon the love of notoriety which has become one of the most prevailing passions of the day. But the private sitter, whose photograph is intended solely to give pleasure in the family circle or among intimate friends, is clearly entitled to be protected from a publicity which he has not courted and which is probably repugnant to his feelings; and such protection is still more demanded when the sitter is a lady, to whom it cannot be agreeable that her features should become the property of any passer-by who cares to spend two shillings in purchasing them. Mr. and Mrs. Pollard are not only to be congratulated on the success of their action, but they deserve to be regarded somewhat in the light of public benefactors for having obtained a judicial decision upon the subject.

In the particular case at issue, the right claimed by the defendant, if it had been established, would in its exercise have been nothing worse than a nuisance; but there have been many instances in which a similar claim has assumed a totally different aspect, and has been employed by unprincipled persons as a means of extorting money from others. There was an excellent story, which, if not true, was at least *ben trofato*, of a young lady who made it her profession to request the clergy of her various places of temporary sojourn to visit her, in order that they might resolve her doubts upon some knotty points of faith or morals, and who managed in the effusiveness of her gratitude for the peace of mind which every such interview afforded her, always to seal its termination with a kiss. The touching incident was recorded by a concealed camera, and the clerical victims were shortly afterwards furnished with prints, and were requested to purchase the negatives at fancy prices. Of those who would be likely to fall into such a trap as this, or into any similar one, many

perhaps would be too weak to avail themselves of the protection which the law would now afford them; but it is probable that the chance of unpleasant consequences to the person attempting such a form of extortion would be sufficiently great to render the pursuit of victims less pleasant and less profitable than it has been aforetime. It was at least a fortunate accident that the line of defence stripped the case decided by Mr. Justice North of anything peculiar to its own circumstances, and compelled him to lay down the law with regard to the general principle at issue. The agreement to treat the motion for an injunction as the trial seems to show that both parties desired to avoid expense, and so far diminishes the probability that the question will be carried further by appeal, unless, indeed, some photographers may think the decision so serious an infringement of their present liberties as to make it worth their while to combine for the purpose. We can only express a hope, which all intending sitters will be likely to share, that the decision, if appealed against, will be upheld, for if this hope were disappointed the familiar travesty of a once common form of advertisement, which Mr. Punch profanely applied to matrimony, would be almost certain to recur to the minds of the male relatives of pretty women. Husbands and fathers would be likely to say as advice to ladies intending to be photographed, "Don't." It is at least possible that the results of such interference might diminish the profits of the business in a greater degree than the sale of copies to strangers would increase them.

TONING.

(Paper read before the London Camera Club, by Mr. H. M. Elder, M.A., on Thursday, Nov. 1; Mr. S. B. Webber in the Chair.)

ONE of the most important operations the ordinary silver print undergoes is that of toning, *i. e.*, the production of an agreeable tint on the finished print, instead of leaving it come out what color it will. No doubt photography would never have gained the popularity it has had it been impossible to alter the offensive red of an untoned silver print. It seems equally desirable that a method may be found by which the tone of a bromide print should be brought under control. Since bromide printing first became popular, it seems thatfew, if any, attempts have been made to modify the cold blacks and grays produced in the direction of rendering them warmer, and more like a sepia or burnt sienna drawing. M. Vidal, it is true, in a communication to the Photographic Society of France, describes a method of toning Eastman's bromide paper with platinum (*British Journal of Photography*, Vol. xxxiv., p. 158), but this only renders the tone colder and bluer than before,—an effect hardly to be desired, except in some special cases. There can be no doubt that it is desirable to have some method of producing a warm tone in bromide prints, and this is especially felt by those people who live in a large and foggy town, and are engaged in the day-time, and who, in consequence, are compelled to do all their printing by artificial light. As I myself am thus situated I proceeded to try some experiments with this end in view. It has been said that if a bromide print be considerably over-printed and then developed with a very weak ferrous oxalate developer, the result is to produce a picture of a much warmer tone than usual. I tried this in every way I could think of, but only succeeded in

producing flat, uninteresting pictures, which, at the best, were a muddy, disagreeable brown.

The Eastman Company, in their instructions for making transparencies by transferotype, give a method of toning these with uranium,—in fact, they recommended the well-known uranium intensifier. It seemed reasonable to suppose that if this would work well on a gelatine film on glass, it would also work on paper. Application was made to the Eastman Company to know if they had tried it, but they declared it was impossible to get a satisfactory result on paper, as the solutions produced an ugly yellow stain that could not be removed. However, I thought it worth while to try the experiment, and proceeded as follows: A print was made, developed, and fixed, and then thoroughly washed in several changes of water and under the tap. It was then passed into a weak solution of sulphuric acid to destroy the last traces of hypo and remove any slight traces of the iron solutions that might still hang to it. It was then thoroughly washed again, and passed into a mixture of equal parts of a one per cent. solution of uranium nitrate, and a similar solution of potassium ferricyanide (red prussiate of potash. After a few moments, the prints visibly began to change in color, and when it seemed that the change had proceeded as far as it would, it was well washed and passed into a clean hypo bath for a few minutes. The color again changed, becoming much redder, and, after washing, the print was found to have acquired a tone somewhat similar to that of a burnt sienna drawing. The whites were slightly stained, but not yellow; in fact, the print much resembled an engraving on India-toned paper, Having so far succeeded, I was led to try and modify the tone in various directions. I first found that the whites might be rendered perfectly pure again by passing the print into a bath containing alum and sulphuric acid, after washing out the hypo. Then, that a considerable difference could be produced in the final result by not pushing the action of the toner (or intensifier) so far. And lastly, that by omitting the hypo bath entirely, and passing the print at once into alum, or, if necessary, alum acidified with sulphuric acid, a rich brown with an almost purple tinge could be obtained. It is possible, then, to produce a considerable range of tone, varying from a blue-black to a red-brown. The process will be as follows:

Make up two stock solutions, No. 1 containing 10 per cent. of uranium nitrate; No. 2, 10 per cent. of potassium ferricyanide (not ferrocyanide). No. 1 will keep indefinitely, and No. 2 will keep very well if well stoppered and in the dark: but as it is somewhat liable to change, only a small quantity should be made up at a time. It is as well also in making this up to pick out bright, clean crystals of the red prussiate.

The print to be toned should be very slightly under-exposed, to allow for the intensifying action of the toning-bath. It must be fixed as usual, and then well washed and passed into a weak acid bath. This may conveniently be sulphuric acid, and the strength is immaterial,—about one or two per cent. will do. Wash out the acid, and lay the print face up in a clean developing dish. Make up the toning-bath of twenty parts water, one part No. 1, and one part No. 2, and pour this on to the print immediately it is mixed. When the action has gone far enough, the toning solution is poured off, the print rinsed under the tap, and transferred to a new hypo or alum bath, according to the color desired. The toning solution is sufficient for

two or three prints, one after the other, but it will not keep for more than a few minutes, and the later prints toned in it are likely to be stained.

The action of the toning solution is not difficult to comprehend. It is, of course, the same that takes place when a negative is intensified by this method, and is most easily understood by first considering the reducing action of potassium ferricyanide. Chapman Jones's "Science and Practice of Photography" shows that in the latter case the finely-divided silver of the image partly reduces the ferricyanide, forming in general ferrocyanides of potash and silver. In the presence of nitrate of uranium insoluble ferrocyanide of uranium is at once formed, giving an image of the well-known chocolate-brown color of this salt. The ferrocyanide of potassium formed in the above reaction probably accounts for a loose deposit of the brown substance that frequently forms on the dark parts of the print, and sometimes gives trouble by staining the white around these.

There are several advantages to be obtained by the application of this method besides the alteration in the color of the finished print. As might be expected, the solutions harden the gelatine film, and so renders frilling and blistering in warm weather less likely to occur. But the most remarkable advantage appears to be that a greater range is given to the print; a print that is flat and uninteresting before being toned, will be considerably improved in depth and sparkle by it. For instance, it is very hard, and in some cases impossible, by any amount of dodging, to get a decent rendering of distance in a bromide print without "bringing up the shadows" in the foreground completely, but if such a negative be printed for the best result in the foreground, and then toned in this manner—or, perhaps it should rather be called intensified—the foreground is not hurt, but rather improved, and the distance is brought up and made visible. In fact, I would say that if uranium is used with judgment, the curve representing the range of bromide papers, as described last week by Mr. Lyonel Clark, may be made considerably flatter, and brought much nearer to that of alpha, or silver paper, *i. e.*, a much denser negative may be used to print from.

Of course the process has its drawbacks, as every process must, and the most troublesome cause of failure is the presence of minute traces of an iron salt in the paper. However carefully the washing and scouring may be carried out, there are occasionally some spots to which the iron salts of the developer cling so tenaciously that it is practically impossible to remove them, and wherever there is one of these, a pale blue mark will appear on the finished print. It is obvious that this must be so, since, during the toning process, both ferricyanides and ferrocyanides are present; hence Prussian blue will be formed whether iron is present in the ferrous or ferric state. Also, if in the after-treatment a print be brought into contact with iron before it is dry, a blue stain will result. In fact, in one case I spoiled a whole bath of prints by blotting them off on paper that was almost imperceptibly stained with iron-mould. Another objection to the process has already been referred to, viz., the tendency of the brown precipitate to spread to the high lights round any large dark patch in the print. This may generally, however, be avoided by using an absolutely fresh toning-bath for any print in which it is likely to occur, and allowing the dish to remain still during the operation. If this is done, and the direction in which the solution is poured off chosen with judgment, the high lights may be kept clean.

DISCUSSION.

The CHAIRMAN remarked that a very interesting subject had been opened for discussion. Every one must have noticed in the exhibitions how we had been passing from warm to cold colors in printing processes. The uranium salt was fairly inexpensive, and this would offer no obstacle to its use. In toning, he thought cleanliness of the first importance. Ninety-nine hundredths of our difficulties in toning were to be ascribed to want of cleanliness. In his experience he had never found it difficult to get a good tone with the gold bath. He thought the difference of tone claimed as coming from different negatives was much exaggerated.

MR. EYRES agreed that cleanliness was of the utmost importance. After describing his own methods in detail, he remarked that in the uranium-toned prints sent round by Mr. Elder he thought the untoned one gave the distance better.

MR. RODGERS compared the prints put forward, and was of the opinion that the distance was rendered grayer than the foreground, by which a correct and pleasing effect was gained.

MR. DAVISON thought some discussion as to the relative merits of various toning-baths might be of interest—borax, acetate, bicarbonate, etc. The color of prints was an important consideration, and most of these bromide prints shown by Mr. Elder were improved by the change of the intensification to red and warm colors. He considered the effect on the alpha paper was even better. In some cases there was an inequality in the color, as though the action had not been uniform. He very much doubted the advantage in a photograph of having the distance grayish and all the rest of the picture a warm color. A monochrome picture was better than a two-color photograph could be. Although under the influence of platinum there had been a set towards cold color in the deposited image of photographs, he was inclined to foretell a return to warmer colors again, or, at least, to a much greater use of sepia processes on matt surfaces than at present held. In regard to the interesting process under discussion, he hoped we should be able to obtain the same results as Mr. Elder, but he was somewhat dubious on the point. Mr. Elder evidently had qualifications few present could claim. For instance, Mr. Elder had stated incidentally that he had ventured to lick a gold-toned print, and the image had vanished like a dream. Few of us could hope to attain to this.

MR. LYONEL CLARK said that since every one had not the facility of printing by daylight, any step in the improvement of the developable positives must be of great use, and he thought that, therefore, Mr. Elder's experiments would be much appreciated by amateurs. Some of the tones obtained were very pleasing. There was every reason to believe they might be permanent. Uranium printing was a very old process, and was brought out many years ago with a great flourish of trumpets under the name of Wöthlytype. It certainly did not last long, but he had never heard it accused of fading. He thought Mr. Elder had not quite followed out the chemical reactions. Whilst the uranium salt was reduced, the silver salt was also altered in its composition, there being a mutual interchange. The newly-formed silver salt was in such a state that it was dissolvable in hypo. This would account for the different resulting colors where hypo and alum were used, He could not sit down without referring to Mr. Eyres' remarks about blisters. He thought that the difference of temperature theory was quite exploded by this time. He had tried to produce blisters

by hot and cold baths, but lamentably failed. Although unwilling to dogmatize on the point, he thought blisters were entirely due to an acid reaction of the albumen. If acid be added to hypo, sulphur is thrown down and sulphurous acid gas given off. If, then, there were acid in the albumen, on coming in contact with the fixing-bath acid would be liberated and blisters caused. He was excessively pleased with the previous speaker's remarks about the manipulation of silver prints, as he hoped that the long list of tedious operations described would effectively prevent anyone ever using the process again.

MR. FERRERO always warmed his toning-bath, as it shortened the process. He thought a chloride of lime bath kept best, and gave good purple tones, but it seemed to reduce the print more, and they should not be washed so much beforehand.

MR. BUCHAN-HEPBURN made some inquiries concerning aristotype paper.

MESSRS. STROH, J. KING, CLARK, and EYRES then made remarks upon the W thly process.

MR. AUSTIN said it would add years to his life to be informed of an easy and effectual mode of toning, for since he had placed his affections upon a young lady named alpha, he had passed his time between brief hopes and general commination. She persisted in toning unequally and irregularly, and differently on every occasion. Still, he found by fixing and toning, the desired appearance came,—that is, he got a change of color; he couldn't swear it was toned.

MR. W. A. GREENE referred to the toning of alpha paper by mercury intensification.

MR. RODGERS found toning the alpha paper after fixing the best and easiest process. By intensification with mercuric chloride and cyanide of silver, a beautiful result was obtainable.

MR. ELDER, in replying, pointed out that the tone of a finished print depends largely on the negative from which it is taken. He had a negative which, printed on ordinary silver paper without any toning at all, gave a result that was almost comparable to a fully-toned print. As regards Mr. Eyres' remarks on scrupulous cleanliness, he fully agreed with all that he had said. In all operations connected with chemistry it was impossible to be too careful in securing absolute cleanliness in the apparatus used. He did not agree with Mr. Eyres that in the examples of toned bromide prints shown the effect of distance had been lost. There was no doubt, as Mr. Davison had said, that platinotype was the most beautiful and the best of all printing processes, but it was not in everyone's power to use it, or any other process which required daylight, and so he considered that an account of any treatment that enabled the operator to produce greater variety with developed papers would be of interest to those who were condemned to use them.—*The Journal of the Camera Club.*

COMPOSITION IN ART, AND ITS APPLICATION TO PHOTOGRAPHY.*

IN preparing this short paper, I have made an effort to treat my subject in a simple manner. If I have assumed too little knowledge on your part I must beg you to excuse it.

Composition, as applied in art matters, is rather a vague term, and there are

* Read before the members of the Southsea Amateur Photographic Society.

differences of opinion as to its full meaning. Many imagine "subject" and "composition" to mean one and the same. This is a mistake. At all events, artists apply a different meaning to each of these terms.

On reference to a dictionary you will find the word "composition" stated to mean a "mixture," or a writing. Well, the various ideas on what is meant by "composition" are certainly "mixed ones." It is clear the dictionary does not help us much, the explanation not being definite enough.

It will be better if I state its meaning as used in this paper.

The meaning attached to it is, viz., the arrangement or grouping of the various parts which make or compose a picture, whether landscape, still-life, flowers, or figures, the latter of course including portraiture. A good subject does not always insure, or mean, a good composition; you may have a good subject and a bad composition.

Now what is a good composition? It will perhaps help us if we inquire first what is our object in making a picture. We shall then be perhaps in a better position to decide what is good composition.

In making or composing a picture, some people say our object ought to be to point a moral and convey a good impression, which means, I suppose, to quietly preach a sort of sermon. Well, if sermons were always as short as the subjects of our pictures, we should perhaps like them better.

I remember reading somewhere (but forget who it was that said it, though I know it was some authority on Art), that "the mission of Art is to elevate and give noble pleasure, but not to teach directly. For good or for evil, the influence of an interesting picture is far-reaching; but its influence is indirect; the attempt to preach in point has always ended, as it always must end, in artistic failure. A picture whose only merit is the moral it conveys can only be condemned as bad Art." (That is an authoritative opinion.)

Taken generally, I think our object is to convey pleasure, or a good impression to ourselves, others, or both. If we do this in a proper manner, we shall not only elevate our own minds, but be the means indirectly of elevating others.

Having defined our object and the meaning of the term "composition," we may now consider what is a good composition.

A "good composition" is one in which all the parts are well balanced. Now, the first thing an artist asks himself on commencing a subject is, "Will it make a good picture?" A photographer ought always to ask the same question.

In photography you have only form, light, and shade to consider; color, desirable as it may be, is at present impossible by its means. But in a picture the coloring is often a very important part of the composition, and illustrations in black and white of painted pictures often convey a false impression of their composition or balance. An instance of this may be seen in the illustration, I show.

We may, however, leave out the consideration of color for the present, and confine our attention to the other three.

Sometimes you may have a good subject, and the composition fairly good, but wanting in some little detail; such as in a sea-piece, where you may have some vacant space on the water. In this case a yacht or two would often supply the required detail.

If something of this sort is wanting, the only way is to focus your view, look around and see if there is a possible chance of anything coming past where you want it, then wait patiently for it before you expose.

The same may be said of a land view. In this case a horse and cart, a carriage, cattle, or any people who may be passing, will nearly always supply the little details required to complete a subject.

Of course you must be careful to select appropriate details. A passing funeral is not often a desirable addition to any picture, and it must be remembered that "the best effects have very often to be watched and waited for."

In these matters an artist in sketching has an advantage over the photographer. On the other hand, the photographer can often obtain very fine artistic effects, such as passing clouds, etc., which it would be impossible for an artist to get by ordinary sketching, And here I may venture to remark that it has been the fashion with many artists (and is so still with some) to despise photography and refuse any help it might give.

Many are now beginning to see their error, and there can be no questioning that it will enter very largely into "Art of the future." For myself I can only say that—though I make no pretensions to any knowledge of photography—what little I have learnt has caused me to regret that I did not study it years ago.

An artist also can modify his color whenever necessary; if any part of his picture is too obtrusive, no matter whether it be in the lights or shadows, he can reduce or increase its strength. This was often done by the "old masters." I am bound to admit, however, that modern artists sometimes overdo it, and so modify their pictures, that, in the case of a landscape, it is often beyond recognition.

This is bad art; truth should never be sacrificed, not even for the sake of a good composition. Such modifications, however, are impossible in photography, the only ones open to it being in the selection of view.

There are some people who understand the principles of composition well enough, but who, for some reason or other, are sometimes disposed to carry the theories and rules—which they have read as laid down by certain critics—to an almost absurd extent, and who attach too much importance to what, after all, never had a very general acceptance among artists.

An instance of this may be seen in a book on the table, which is written specially for the purpose of giving hints on this branch, and as it is likely to have been read by many of you I propose to make a few remarks on it.

The author has a very remarkable reputation as an artistic photographer, and also as a writer. The book is generally well written, but I think some of his deductions are slightly in error. He is quite correct in saying that pleasing and satisfactory compositions are formed on the pyramidal, or triangular, and circular systems of arrangement, but incorrect in his assertion that all the best works of the great masters are based upon this principle, as I shall be able to show you presently.

The pyramidal or triangular system of arrangement is simply this:—if in a picture you have a number of lines or boundaries of forms or shadows running in one direction it would give an unpleasant appearance unless they were balanced more or less by some going in an opposite direction. It need not necessarily be the

lines going at the same angle in the opposite direction, nor the same number of lines.

I have already said this idea may be carried too far; it is all very well in some cases, but in painting we often get balance by color alone, and without any particular form.

Nor, in spite of the remarks on page 31, do I see much objection to a fashionably-dressed figure in a picture of a country lane, providing it is properly placed and balanced with the other parts of the composition. Surely modern-dressed people are frequently to be seen in country lanes, and if so, why should they not be introduced as well as country bumpkins? It is quite possible to make a modern dress harmonize with country surroundings; in fact, ladies' dresses are sometimes more suitable than those of country dames. I fear this idea is a relic of those times when it was considered the correct thing by critics to represent all figure-subjects in classical costume, no matter when the event may have taken place.

You will probably remember that Sir Benjamin West, in the picture of the "Death of General Wolfe," now at the National Gallery, was the first to break through this ridiculous rule, and paint all the figures in the proper costume of their own time, in spite of the opposition of Sir Joshua Reynolds and others.

He is rather unfortunate, too, I think, in his selection of Wilkie's "Blind Fiddler" as a specimen of the triangular or pyramidal arrangement.

But is this the only idea to be got out of it? While not denying that this may have been Wilkie's intention, I could just as easily prove that it is based upon an oblong trapezium or polygonal arrangement as on a triangular one.

Take a line from the head of the fiddler to his wife, and down each side of them. This might be said to show a triangular arrangement, but would not a trapezium be a more correct description? Then again, lines from him to the ground, and to the head of the grandfather, then another line to girl on right, and down to the ground, could be strained to support the idea of a polygonal arrangement, and an oblong arrangement could also be deduced from it.

What I have said of Wilkie is equally true of other old masters' works.

Some of Turner's pictures have an appearance of being based as much upon a "square" or "oblong" arrangement as any other, as you will see clearly in his sketches of the "Tower of London" and of "Greenwich."

Michael Angelo's cartoon of "Soldiers Bathing in the Arno," and the modern picture of "The Wedding Morn," show a similar arrangement.

In another place he says, "The interest should always be centered on one point in a picture, and not scattered." This I dispute: it often happens that a picture is better for the distribution of interest. An example of the latter is Michael Angelo's "Cartoon of Pisa" and "Soldiers Bathing in the Arno," "Noah and his Family," by Gozzoli, and also the illustration of Ruysdael's "Watch Tower," from the *Magazine of Art.*

I do not say that it should never be so, but only that sometimes it is advisable to break through this rule.

I give these instances as showing how rules, which in themselves are useful enough, may be carried to excess, and while not denying that good composition may be based upon such ideas, others equally good may be found which have no connection

with these arrangements, and that even the examples given as proofs are just as good for proving other theories.

It is said to have been stated by Turner that "Mr. Ruskin found much more meaning and saw ideas in his pictures that he himself never thought of" (though it is only fair to add that Mr. Ruskin denies this). Be that as it may, I am inclined to think some people are disposed to find ideas in or base theories on the "old masters" that they themselves never intended.

I have not had time to examine properly the whole of this book, but have no hesitation in saying that it is a very useful one generally, and very ably written, and will well repay the trouble of reading it.

We sometimes hear it stated that a landscape negative should be sharp and clear throughout. Now I am willing to admit that some who make great professions of artistic feeling carry this softening of forms in a picture to an absurd extent, and often make it a cover for their failings in being unable to get sharp and clear forms. Still, I cannot entertain the idea that a landscape should be sharp in all its parts; you must have contrast between softened or indistinct forms in the distance, and the sharpness of the nearer parts or foreground; in fact, if the distant parts are very clear, you lose the idea of their being some distance away.

This is an essential quality both in landscape and figure subjects. You cannot have good composition without it, and I may here remark (though it does not come strictly within the limits of my paper), that too much importance is attached to the burnish or polish of a photographer, which is merely a mechanical operation. No amount of burnish will make or add anything to a good composition, and I was glad to be informed the other day that in all the best works to be seen in photographic exhibitions those with a mat or dull surface were in a majority. This is as it should be. It seems to me the feeling in this case is akin to the strange preference for "oil painting" over "water-color painting," posessed by many people. Numbers of times have I heard people remark that "they liked oil colors better because they shine so," forgetting that the gloss is no part of the artistic work in a picture, and also that "water-colors" could be made to shine if it were necessary.

In giving examples of "good and bad" composition, I do not wish you to assume that those produced are perfect specimens in all cases. I have had to avail myself of such illustrations as could be conveniently got at. Some of the members have kindly allowed their photographs to be used for illustrating this subject.

A good composition usually depends upon (1) the point of view selected; (2) the lighting of the subject; (3) the arrangement of the additions which are brought in to complete the balance of form, so as to make it satisfactory.

(These parts of the subject were illustrated by a number of engravings, etc., from paintings, and also by a selection from photographs contributed by members to the "recent local exhibition.")

It is very interesting to study the work of the "old masters of the Italian schools," and to trace the influence which the development of the "art of perspective representation" had npon their composition. It would take up too much time to do so this evening. A paper might be given upon this branch alone.

I have not been able to touch upon all parts of this subject, and much more might have been said upon those that I have mentioned, but time would not permit, and I must now bring my remarks to a close. In conclusion, I may say that I have tried to touch chiefly on those points about which there may be a difference of opinion, in order that a little discussion might be raised.

A. FISHER,
Association S. A.

THE HYDROCHINONE DEVELOPER.

From Photographische Notizen.

SOME time ago I communicated my views regarding the merits of the hydrochinone developer, but in the interim much discussion has been brought forth on the subject, and scarcely a sitting of the Association takes place in which the topic is not touched upon in some shape or form. It is promulgated more and more that the true universal developer has at last been found; valuable for every operation, whether plates or paper are concerned. Now must this claimant step forth to receive the true judgment.

Opinion is divided as to whether it is best to employ potassa or soda, or caustic soda, or both, or all. The verdict against caustic alkali is that it causes frilling and puckering of the film. (This is apparently not the case when plates are used which have been prepared with a coating of chrome-gelatine). The quantity used is another item to be taken into consideration.

Herr Baltin, of the firm of Selle & Kuntze, court photographers, Potsdam, Prussia, who are very zealous advocates of hydrochinone for portrait work, writes to me that my plan of using caustic alkali must be modified by moderating the quantity employed, and that the preparation must be added to the prepared developer just before use.

He makes use of the following formula, which constitutes a concentrated hydrochinone developer.

Hydrochinone,	25 gr.	(386 grains.)
Sulphite soda,	150 gr.	(4.9 oz.)
Potassa,	300 gr.	(9.8 oz.)
Water (dist.)	750 c.cm.	(26½ oz.)

For use take 25 c.cm. (7 drs.) of above concentrated developer to 75 c.cm. (2½ oz.) water, to which add 2 c.cm. (34 minims) of a 40 per cent. caustic potassa solution.

This solution develops so rapidly that the operation is completed in one or two minutes. Herr Baltin has developed in the one solution (25 oz.), twenty-one double cabinet negatives without renewal; that is, the amount employed is sufficient for a whole day's work in a gallery. What more could be asked of a developer than this? It would set aside the unfounded assertion that hydrochinone is a developer for dilettantes only.

My son has been investigating the development of bromide silver gelatine paper with hydrochinone. The disadvantage attending the development of bromide prints

with hydrochinone consists in the staining of the paper an ugly green color with even slight overexposure. This is especially the case with paper containing iodide of silver.

Recently he found that the tone of the image materially depended upon the amount of carbonate of potassa added to the developer.

A developer made according to the following formula:

Sulphite soda (cryst.)	40 gr.
Hydrochinone,	5 gr.
Water,	900 c.cm.
Carb. soda (cryst.),	50–150 gr.

gave constantly the ugly green stain; with larger amounts of soda the tone improved, approaching to brown and black-brown.

Carbonate of potassa has this great advantage over soda, that the tone is never green, and hence is to be preferred in developing paper prints. My son has, in consequence, employed a still more concentrated developer than Herr Baltin makes use of:

Sulphite soda (cryst.)	40 gr.	(2¼ ozs.)
Hydrochinone,	5 gr.	(77 grs.)
Water,	150 c.cm.	(6 oz.)

After the hydrochinone has thoroughly dissolved (it may be necessary to place the flask in warm water), add to above 50 to 54 grains (1 oz. 7 dr.), carbonate of potassa (a greater amount of potassa is apt to cause blisters.) For immediate use dilute 1dr. of above with 1 oz. water.

In a concentrated form this developer keeps a long time (in diluted form about two or three weeks), and hence is highly to be recommended for travelers.

With the same formula he obtains very good results on gelatine plates. It may also be used for instantaneous exposures, inasmuch as it brings out the detail well, and the development proceeds rapidly.

For negative process, however, soda is to be preferred to potash. The concentrated developer for the purpose is made as follows:

Sulphite of Soda (cryst.)	40 gr.	(2¼ oz.)
Hydrochinone,	5 gr.	(77 grains.)
Water,	200 c.cm.	(7 oz. 1 dr.)
Carbonate soda (cryst.),	75 gr.	(2½ oz.)

For immediate use 10 c.cm. (3 drs.) is added to 35 c.cm. (1¼ oz.) water.

The developer may be regulated to suit the character of the plate or the result required. Less water is recommended for plates which work too hard, while for plates working too soft more water should be added. Estimating from the formula given, hydrochinone is considerably cheaper than pyrogallol as a developing agent.

Hydrochinone itself is somewhat cheaper than pyrogallic acid. In 900 c.cm. (32 ozs.) of pyro developer there are 8 gr. (123 grains) of pyro; in the same quantity of hydrochinone developer there are only 77 grains of hydrochinone, and it must also be remembered in estimating cost, that pyro developer requires to be renewed after several plates have been acted upon, which is not necessary with hydrochinone.

Herr Baltin recommends that all plate makers should use chrome gelatine as a substratum for their plates. I cannot refrain from saying that in my hands plates with chrome gelatine substratum, when subjected to solution containing considerable carbonate of potassa, showed puckerings around the margins, to say nothing of the effect upon those treated with caustic alkali. I believe, however, that the quality of the gelatine, whether hard or soft, has a great influence.

The rapidity of development is a great desideratum for the portraitist, as operators have a great desire to speedily know the result of the sitting. They are not so fearful of over-exposure as the amateur is, inasmuch as the first trial in the morning gives the guide for the rest of the day, but the landscape photographer prefers to have a slow-working developer to counteract the action of too great exposure.

PROF. DR. H. W. VOGEL.

THE MAKING OF DRY-PLATE EMULSIONS.

Lecture delivered by E. H. Lyon bofere the Boston Camera Club.

WHAT a marvelous thing is the modern dry plate! What wonderful possibilities are contained within its creamy film. Does not the development of the latent image savor of the supernatural?

Our life is made up of images,—home, wife, children, friends, town, country,—and yet how imperfect are the images stored away by memory compared with those we may produce by the aid of photography. May we not call a dry plate a sort of portable memory?

I think the three inventions of modern times which associate themselves most closely with our inner lives are the telephone, the phonograph, and the gelatine dry plate:—the first bringing us the far-distant human voice; the second embalming that voice so we may reproduce it at will, and the third preserving for us a visible image of the speaker and his surroundings.

A dry plate emulsion consists essentially of a finely divided precipitate of bromide of silver suspended in gelatine. This precipitate is formed by the addition of nitrate of silver to a solution of gelatine containing a soluble bromide; generally of an alkaline metal, such as Potassium, Ammonium, Sodium or Lithium.

It is needless to tell you how extremely sensitive this precipitate is to light, but we do not know as yet why it is so. We only know that the molecule is capable of reduction in direct proportion to the extent of its bombardment by light waves. The making of a dry plate is not nearly so difficult an operation as many suppose. I consider the correct exposure and development of the plate the most difficult of the two. Of course I am not speaking of the marvelously rapid plates of the regular manufacturers, whose carefully-guarded secrets cover processes of considerable intricacy and nicety of manipulation. By the formula I will demonstrate to you this evening you can easily make plates that will give excellent negatives with an exposure of two seconds, stop *f*–15 upon an open landscape in June. Good drop-shutter-work may also be done with them. I am convinced by long experiment that the emulsion should be made with a view to the work for which it is intended, and that it is an impossibility to make a really good "all-around" plate. I have frequently

noticed that a plate that will give good results in the studio will be super-sensitive to diffused light on landscape work, causing distant objects to disappear in fog in order to get sufficient exposure in the foreground. I often hear it said that commercial plates all have chemical fog, that the shadows are not clear glass, and yet you will notice that any part of the plate that has not been exposed at all to light will be clear glass. What ordinarily appears like chemical fog, is really the effect of diffused light upon the gelatine. This will frequently occur when the light has been too weak or the exposure too short for direct reflections from objects to impress themselves upon the plate. You may try an interesting experiment to prove this by opening the door of your dark room so that a little diffused white light may fall upon half of a dry plate, place in weak developer for a few minutes, and fix. The exposed half will present a mealy, ground-glass appearance, without apparent reduction of silver, while the unexposed half of the plate will be clear glass. Therefore a good landscape plate must not be too sensitive to diffused light, but it should be highly sensitive to reflected light from different objects, and give a good rendering of color values. For general landscape work I prefer a pure bromide to an iodo-bromide emulsion. For interiors and portraiture, a small percentage of iodide is indispensable, as it increases the color-sensitiveness for yellow and red. Of course my remarks apply largely to the ammonia process of dry plate making. I have experimented with nearly all the published formulæ and find that the ammonia process is the most reliable and by far the simplest method which the amateur can attempt, although I find many who are in favor of the boiling process. There is much difference of opinion in regard to the use of iodide in emulsions. With pure bromide I find greater latitude of exposure. I have not found any gain in rapidity for landscape work to result from the addition of iodide in the ammonia process. If two plates are exposed in sections upon the same landscape, one pure bromide and the other iodo-bromide, they will be found to have correct time upon about the same section. It will be noticed that over-exposure on the pure bromide only increases density through a considerable range, while over-exposure on the iodo-bromide plates will quickly result in a flattening of the lights. I will explain what I mean by exposing the plate in sections. Mark a plate-holder slide in sections of a half-inch, and number them; put a plate in and expose the whole of it for one second; push the slide in half an inch and expose another second, and so on, being careful not to jar the camera. On developing the plate will be seen at once which gives the clearest and best result. The correct exposure for that particular plate or emulsion will be equal to the sum of the short exposures on that section.

The mixing and digesting of an emulsion are the simplest parts. The troubles are likely to come after this, and are caused principally by the improper application of new gelatine. We are likely to seal up the delicately poised molecule we have produced, rendering it insensitive and difficult to reduce. I will show you how to make an emulsion which, for simplicity and excellency of results in landscape work, I think is unsurpassed by any of the rapid commercial plates. It is made by the ammonia process. As there is a good reason for each step in the process, the directions given should be closely adhered to.

Here is the formula:—

A

Distilled water	4 drams
Ammonium Bromide	30 grains
Nelson's "I" Gelatine	5 grains

B

Distilled water	4 drams
Nitrate of Silver	45 grains

Precipitate and redissolve with strong ammonia.

C

Hard Gelatine (Heinrich's of Winterthur)	30 grains

This is the way I mix the emulsion. Place the hard gelatine "C" in sufficient distilled water to cover it, and set aside to swell for one hour. Now take a wide-mouthed eight ounce bottle, and put in four drams of distilled water and thirty grains of bromide of ammonium. Let this dissolve, and then put in five grains of Nelson's "I" gelatine, taking care that the solution covers it. Set this "A" solution aside to swell for one-half hour.

To prepare solution "B" weigh forty grains of nitrate of silver, and dissolve in four drams of distilled water; add drop by drop enough strong ammonia to just redissolve the dark-brown precipitate of ammonia-nitrate of silver. If an excess of ammonia has been added, it should be allowed to pass off into the air before the solution is used. The solution should have only a faint odor of free ammonia. Now pour the excess of water from the hard gelatine "C," and dissolve in a covered beaker or tumbler at 120 degrees F. in the water bath. Then place the bottle containing the bromized gelatine in the water bath and dissolve at 100 degrees F. The bottle should be provided with two corks, in one of which a small glass syringe is fitted. All operations up to this point may be conducted in white light. We must now work by the light of our ruby lamp, which may also serve to keep the water-bath warm during digestion. Let the "A" and "C" solutions fall to the temperature of the room, and add "B" to "A," a little at a time, by means of the syringe, at the same time shaking the bottle. Now pour in "C," thoroughly mix, and place the bottle, which has been closed by cork two, in the water-bath at 100 degrees F., to digest for one hour. It should be shaken frequently during that time to prevent the formation of a coarse precipitate. A thermometer should be the inseparable companion of the bottle in the ammonia process, and the temperature closely watched. A cheap thermometer without a case serves the purpose. The lower portion of it is wrapped with two thicknesses of flannel, and a strong rubber band fastens it to the outside of the bottle. Do not allow the temperature to rise above 100 degrees F. during the digestion. This is very important, for at high temperatures ammonia is destructive to soft gelatine, and it appears to convert hard gelatine into a leathery compound which retards or entirely prevents the subsequent ripening of the emulsion. We may allow ourselves plenty of non-actinic light while mixing and during digestion. After washing and during the coating, we should be more careful. The process of digestion may be watched by placing a drop of emulsion upon a piece of glass from time to time, and examining it by transmitted light. When first mixed it will have a salmon color, changing to blue, and finally to a blue-green. It should now be poured into a

shallow dish to cool. This will take about an hour. When firmly set, take it up with a silver spoon, and squeeze through a piece of embroidery canvas into a dish of cold water. A large yellow bowl is useful for this, as the shredded emulsion may be readily seen by ruby light as it settles to the bottom.

Keep the shreds in motion with a glass rod. Allow them to settle every few minutes, and pour off the water, replacing it by fresh. Repeat this operation seven or eight times during twenty minutes, and the washing will be quite complete.

Pour off as much as possible of the last wash water, and add one-half ounce of alcohol to each ounce of emulsion. Let the shreds stand in this dilute alcohol for some minutes, then pour the whole upon a piece of soft muslin, stretched across a deep dish or bowl, gather up the corners of the muslin, and squeeze the shreds as dry as possible. Now spread the muslin upon the bottom of the washing dish, and with a silver spoon gather up the shreds and place in a cup or glass, and remelt at 100 degrees F. Then set away in a cool place to ripen for from one to five days. The addition of alcohol to the last wash water accelerates the ripening process.

The ripening of an emulsion appears to cause an organic change in the structure of the gelatine, after digesting or cooking, which brings about a granular condition. I would describe it as a mealy condition. Herein lies the extreme sensitiveness of a gelatine emulsion. Out of perhaps twenty different ammonia formulæ, nothing is said about the method of making the first "A" solution further than to combine the ingredients, and yet I find it is very important; the resulting emulsion depends for its speed and excellence very much upon these first steps. For instance, if I heat the water and bromide to a high temperature, and then add the gelatine dry, it will dissolve in a few minutes, but the emulsion will not be so rapid as when it is allowed to swell slowly and then dissolved at a very low temperature. I consider 100 degrees as high as it is safe to go with a gelatine solution that contains alkaline bromide. I use a pair of cheap scales, which are sold at the stock houses; a piece of tissue paper should be used to weigh out each ingredient upon, throwing it away so that there may be no contamination, and it is very necessary in dry-plate making that everything shall be scrupulously clean.

In regard to distilled water. I have made a great many emulsions with the ordinary tap water, and I find that it answers the purpose very well, but still at certain times it will not give good results, although you may make a great many emulsions with it and not have any trouble. The ordinary tap water will sometimes contain iron and sodium, or there may be some trouble with the pipes, and if you make a poor emulsion it is very valuable to know what is responsible for the failure, and if the water is right to start with, of course you can look elsewhere for it. Snow- or ice-water would be preferable to tap water, but as you use such a small quantity anyway, —for every hundred grains of silver only two ounces,—it is better to obtain distilled water and use that only. The washing of the emulsion may be done with tap water.

Now, as I said before, temperature is a very important thing, and if the formula says 100 degrees, do not allow it to be as high as 110, for gelatine has been well called an unruly beast.

In order to keep the emulsion at a uniform temperature while digesting, use a small chemical stand provided with movable rings. The water-bath may rest upon one

of these, and, with a little practice, you will know about how far above the lamp it should stand in order to keep the water at 100 degrees. Of course the temperature of the room has something to do with that.

I would recommend the amateur dry-plate maker to make small batches. Forty-five grains of silver will coat about a dozen 5x8 plates, and that would be as many as you would care to make at one time. And, another thing, it is not possible to make two batches exactly alike. No amateur could do that. I do not think the manufacturers can do it, and the best way to secure an average speed in emulsions is to make a number of small batches and combine them. With four or five small batches combined just before coating, you will get an average speed that will not vary much. You may have a number of batches ripening all the time. When you want to make a few plates of an evening, take a tea-spoonful from each glass and melt together.

Only photographic gelatine should be used. This has been cleansed of fatty matter. Nelson's No. 1 soft and Heinrich's, of Winterthur, hard gelatine are the best. Hard and soft gelatine may be cut up fine with scissors and kept in tin boxes ready for use. Gelatine should never be dissolved by adding it dry to warm ripened emulsion. It should first be allowed to swell for a few minutes, and then dissolved at a low temperature. The last addition of gelatine to the emulsion, after washing and remelting, should never exceed what is necessary to cause it to set. The amount of gelatine in the emulsion should be such that when a drop placed upon a strip of glass is held against a piece of ice to set, it will have a cheesy consistency when pressed with the finger. If it sets tough, like rubber, add water. I use equal parts of hard and soft gelatine all the year round for the final addition. Enough should be added to bring the total amount of gelatine in the finished emulsion up to thirty grains to the ounce.

The final addition of hard and soft gelatine having been made to the ripened emulsion, we proceed to filter it. Obtain an Argand chimney, which is simply a tube of glass about seven inches long by one-and-one-half in diameter. Upon one end of the chimney stretch a piece of chamois-skin (not sheep-skin) which has been dampened with water. Two or three turns of a strong rubber band will hold the chamois-skin on. Warm the tube over a lamp, pour in the emulsion, then, placing the mouth close to the open end, blow vigorously, and the emulsion will be forced through.

The emulsion is now ready for coating. We next want some clean glass plates of the desired size. We may use old or spoilt negatives over and over again by thoroughly cleaning them.

After the old plates stand in a strong solution of washing soda, which is pretty near the boiling point, for ten or fifteen minutes, then, with a small scrubbing brush, the films may be easily removed. By placing small clips of wire or tin on the edges of the plates, they will be prevented from sticking together, while in the soda solution. Have three basins of hot clean water handy, rinse the first plate in each immediately after removing the films, and stand in a rack to dry. When dry, polish the side to be coated with a piece of chamois skin moistened with alcohol, upon which a little whiting has been dusted.

A level surface upon which to allow the gelatine film to set is the next requisite. A slab of marble or slate will do for this. It may rest upon three screws set in the table

or bench. A small spirit level should be used in adjusting it. The slab should be as cold as possible when used. A little chopped ice may be allowed to stand upon it for a half hour previous to coating, or it can be chilled in a refrigerator. It is important to have the film set as soon as possible after coating, as the sensitive bromide will have a tendency to settle down from the surface of the film, making long development necessary in order to get density. It also decreases its sensitiveness. The best method is to place the freshly-coated plate upon a perfectly level shelf in a refrigerating box, but this is not absolutely necessary.

Plates larger than 5 x 7 seldom have a perfectly plane surface, being more or less "dished." The emulsion should be poured upon the concave side, and the four corners pressed down by weights before the emulsion has time to set. Of course a small spot on each corner has to be sacrificed when this is done, but plates having considerable curvature can thus be coated with a film of uniform thickness. As soon as the film sets, which it should do in three or four minutes, place the plate in the rack in the drying box. Use about one-and-a-half drams of emulsion to a 4 x 5 plate. A little practice will enable the amateur to pour about the right quantity upon the center of the plate without measuring. Guide the emulsion with a glass rod to the edges. Hold the plate on the extended fingers while coating, rocking it gently until the emulsion has spread uniformly. If the temperature of the room is below 65 degrees, the pile of clean glass should remain near a stove or in a warm place long enough to take off the shell before coating, but the plates should never be appreciably warm to the touch. The drying of the plates will be a serious trial to the patience if the proper arrangements are not made. The best drying box for the amateur should be made of a tin cracker or cake box. A tinsmith will put on an extra rim which will make the cover light-tight. To each end of the box attach a three-inch tin pipe having at least two elbows to serve as light traps. Arrange a shelf or stand for the box near a chimney, and connect one pipe with the flue. A strong draught of air will pass through the box. The inside of the box and pipes should be blackened with a mixture of lamp black and alcohol, containing just enough shellac to keep it from rubbing off. By placing the ruby lamp, or any lamp, under the horizontal inlet pipe, a few inches from the box, the air is slightly warmed, and the drying is hastened. Do not let the temperature in the box exceed 86 degrees, or tough, glassy film will be the result. The plates should stand in a rack in the direction of the draught, and at least three-quarters of an inch apart. A batch of plates will dry over night in such a box. They should dry with a matt surface, and will show no drying marks if the emulsion has been thoroughly washed and the draught is strong. A piece of mosquito netting, smeared with a little glycerine or molasses and made to cover the open end of the inlet pipe, will prevent dust from entering the box. This precaution is hardly necessary if there is no carpet upon the floor. As the amateur will probably make his plates in the evening, any room may be used that can be kept dark, but I advise him by all means to have a room, such as an unused chamber, attic, or storeroom, where he can leave his bench, chemicals, glassware, and drying-box in dark and inviolate seclusion during the day. A good darkroom is, of course, the best place, although if very damp the plates will dry slowly. Extreme care is necessary not to contaminate the emulsion with any of the chemicals used in developing. There is a great difference of opinion in regard to the use of

iodide in emulsions, and this is due to the fact that slight changes in manipulation where it is used produce such widely different results. My own method of using it has given excellent results. In the first place, I find that three grains to every hundred of silver is as much as it is safe to use. I generally use about two grains.

Follow the formula previously given until ready to add the silver to the bromized gelantine. Before doing so add to the latter one drachm of a solution of iodide of potassium, containing eight grains to the ounce. Do not shake the gelatine solution until you begin to add the silver. Proceed as directed in previous formula until the emulsion has digested at 100 degrees F. for-one half hour, or until the blue stage is reached; then add fifteen grains of swelled soft gelatine with which ten drops of ammonia has been mixed just before using. When this has dissolved, pour the emulsion into a dish to cool, but do not wash at once. Let it stand from ten to twenty-four hours. Then wash it, remelt, and ripen for one day or more. This is a very rapid emulsion, giving fine negatives of portraits, interiors, or landscapes.

In the above methods the bromide has a firm hold upon the gelatine before the iodide is added. If the bromide and iodide are added together, a modification of the double salt is produced, which requires long digestion and is very hard to develop and fix.

THE MODERN PRACTICE OF PLATINOTYPE BY COLD DEVELOPMENT.

(*A communication to the London and Provincial Photographic Association.*)

TO-NIGHT I propose to confine myself solely to remarks and illustrations of a practical nature; and for general principles I will refer members to a paper read by me at the last Camera Club Conference, and subsequently published in *The British Journal of Photography*. In the paper just referred to, I alluded to the fact that the simplest and most natural of the modifications of the process is the last to evolve itself as a workable method. It is certainly strange that the one method which is similar in form to the iron processes which preceded it—such as the cyanotype, chrysotype, etc., and the one on which I first experimented, though unsuccessfully—should have taken so long to come to perfection. But though a simple method in theory, yet it has cost more labor and experiment than all the other modifications. And this is not surprising, seeing that several important conditions to success had to be found out, and that a very large number of variations were to be examined and estimated. But I think I may safely say that this method is now not only reduced, as it were, to its lowest terms, but is also put into its best possible form.

In this modification of the process, you are probably all aware, in the first place, that the platinum pigment is derived entirely from the platinum salt in the developer; and, in the second place, that the name of the process is taken from the condition of the developer, which is used cold or at ordinary temperatures. I hope to be able to show reasons why this method is entitled to the highest rank amongst plain paper processes; and this not only on account of the artistic quality of its results, but also because it places in the hands of the printer large opportunities for modifying results.

I will now proceed to describe all the most important conditions to be observed in printing operations.

Firstly, the paper must be protected against contact with metallic dust, or metallic substances, and for this reason the inside of the calcium storage tube should be lined with paper, and the sensitized paper should be placed in the tube with its surface bent outwards. Then, in removing the paper from the tube, care should be taken to prevent its rubbing against any of the unprotected surfaces or edges. In opening and closing a tin or zinc tube, a number of metallic particles are abraded, and any of these attaching themselves will produce comet-like marks. For the same reason, in cutting up paper, care should be taken that the flat surface of the knife-blade does not rub the paper.

Now, in order to obtain rich, plucky prints, and to secure a good developing action, the paper must be exposed in a damp state, or, if exposed dry, it must be damped afterwards, and before development.

Perhaps, instead of using the word "damp," which is too strong a term, I should have said "*not dry*." By the exposure of the paper in a cold room at this time of the year, for, say, fifteen minutes before exposure, the paper will be sufficiently damp, or in a dry season a similar exposure in a dampish room will usually be sufficient.

If exposed dry, a similar exposure to damp air before development will be sufficient. But I must here point out that exposed prints, if preserved in a slightly damped state, will slowly gain a tendency to give more half tone when developed. It is impossible to give any exact time indications, but I should say, as a general rule, that prints removed from the frames and then put into a drawer for twenty-four hours will, if then developed, show a maximum of half tone; after a still longer period fog may set in, but I have not yet seen it; though undoubtedly such a long treatment tends to muddiness.

To contrast the three modes of using the paper:—

No. 1.—If exposed dry and developed without any damping, the prints tend to coldness of color, feebleness, and sometimes granulation.

No. 2.—If exposed damp and then developed without "ageing," the prints will tend to warmth of color and maximum pluck without granulation.

No. 3.—If the prints are kept in the same state of dampness as they are when removed from the frames for a long period, or, to apply a term just used, if they are "aged," then they will give, on development, warm prints with a maximum of half tone.

You will at once see that by a little attention to these conditions it is quite possible (as a matter of fact, it is very easy) to obtain from the same sheet of paper a plucky print from a thin negative, and a print full of half tone from one of strong contrast. The conditions, after a little experience, are much more easily controlled than described.

The necessary presence of moisture in the paper during printing operations fortunately enables us to work in a much more convenient manner than formerly, and I strongly recommend the use of flat boxes with hinged covers, of wood or of paper; one to hold paper to be exposed, and another to receive exposed prints. Some of the paper boxes made to hold invoices or music are well suited to the smaller sizes of prints.

I will here mention a little precaution which may be useful to some workers; it is this: Before handling cold bath paper, see that your fingers are not contaminated with platinum salt derived from paper which contains it in its coating, and if your negatives have been used on such paper give them a careful dusting. The neglect of this precaution may involve some curious spots and markings of a slightly brownish color.

Now, as to judgment of exposure. I know that there are some who fail to see clearly when to stop, and in many cases this may be due to a tendency to color blindness, but my experience is that most operators are as accurate as they are with silver printing. But the cold bath paper is, undoubtedly, easier to estimate correctly than hot bath paper. I would suggest that, as a general rule, it is better not to judge solely by the appearance of the high lights, or of the shadows, but to look first for the degree of visibility of the high lights, and then to estimate, in relation to this, the strength of the printed shadows. In other words, an estimation of the appearance of the image as a *whole* is the best method. The only difficult negatives to print are those which are deficient in contrast, or are in a "low key;" but even these are usually made easy by blackening the rebate, so that during exposure the printed image may be compared with the paper unaltered by light, which lies under and is protected by these rebates.

A good plan to adopt in printing from such flat negatives is to cut the paper a little longer than necessary, and then, in placing it in the printing frame, to fold backwards the part which overlaps; this part will then be sufficiently protected from light action to afford means of comparison with the printed portion.

I may say of developers that their name is legion, but the one to be used to-night is, I have very good reason to believe, the best. Potassic oxalate and monopotassic orthophosphate are the developing agents, and these salts are mixed, roughly, in the proportion of two parts of the former to one of the latter. The office of these salts in the developer is described in the paper read at the Conference, to which I will refer you.

One half pound of these salts mixed in the above proportions is dissolved in fifty ounces of water and called "Solution D."

Sixty grains of potassic chloro-platinite are dissolved in two ounces of water and called "Solution P."

Solution D is too strong for general use, but it is perhaps useful to have ready a strong solution, and it is less bulky,

Before making up the developer we will dilute solution D thus:

Solution D, ...	3 parts.	Call this diluted
Water, ...	2 "	D solution.

Now, the standard developing solution is made by taking five parts of diluted D solution and one part of platinum solution P.

I find measures graduated in cubic centimetres very convenient for proportioning these solutions.

The mixed developer keeps in good condition for a certain time and then slowly deteriorates. I am unable, at present, to give any time limits, but I should estimate that no sensible loss in working value would take place within twenty-four hours after it is mixed.

The developer is best worked in a porcelain tray, with a flat bottom, or, if the prints are large, by the trough method. The operation of floating the prints on the developer demands a little attention. In the first place, the prints to be developed should either be flat, or, if they have been rolled up, the printed surface should be convex. If rolled with the printed surface inwards it is not always easy to secure a good flotation. The developing bath is weak in platinum salt, and it follows that the quantity of solution taken up by the printed surface will only rarely suffice to supply sufficient platinum for the complete development of the shadows; on this account it is necessary to float the print on the developer at least twice. But it is better to allow only a short time to elapse between the first and second floatings. I have found that if long delayed the second floating is not so efficacious. The print, after its second flotation, is held in the hand and carefully watched as it continues to grow in detail and strength, and when the right effect has been reached it must be immediately immersed in the acid bath.

During this growth of the image, both the extreme high lights and the deep shadows should be inspected; the one to see that sufficient detail has been developed, the other that the proper strength has been attained. If the shadows are very heavy, a third, or even fourth, flotation may be necessary. In the early stages of a development both the high lights and the shadows may appear granulated, but as development progresses this granulation disappears.

Suppose a print to be floated on the developer, then removed for a few seconds, until most of the detail is out, and then refloated, but instead of being again removed to be kept oscillating backwards and forwards on the surface of the liquid, we shall then obtain a result somewhat similar to that obtained by the rocking of the dish during dry-plate development, namely, a piling up of the metal on the strongest portions of the image. Between the development of each print the bath should be rocked once or twice from side to side, in order to break up surface scum.

When only two or three prints have to be made, and the process is not regularly worked, it is important, in order to secure economy, that developer sufficient only for the prints should be mixed. Now, in order to operate with such a small quantity of solution, I have found that nothing is so satisfactory for applying it as a broad camel-hair brush; at any rate, when the prints do not exceed the dimensions of 12 x 10. I have not tried larger prints, but it is quite possible that the method is applicable even to them, though I should for this purpose recommend the trough method, which is very simple and easily worked.

In using the brush it is almost self-evident that the strokes should follow and overlap each other; if they were made so that they were separated, developing marks would be the inevitable result. Perhaps it is better to work from one side of a print to the other, and if there is a sky this should receive the final strokes. The operation must be carried out rapidly, and with a wet brush, which must be re-dipped in the developer, at least after every second stroke. Before beginning a second print with the brush, let the latter be washed in the developer, so as to detach any ferrous salt which it has derived from the previous print.

As to the best mode of utilizing old developers, I am at present unable to say much, but if they are not more than two or three days old it appears quite safe to mix them with fresh solution. But if much older than this, the safest plan is to put them

aside as residues for reduction by means of zinc, aided, if necessary, by a little hydrochloric acid.

The solutions D and P, by the mixing of which the developer is made, may be used in various preparations and strengths, and by these variations many different effects may be produced. For instance, it is thus possible to increase or decrease half tone, to produce warm or cold tints, to increase or decrease the rapidity of developing action, or to flatten or reduce the strength of the shadows. My intention was to have indicated the means of producing these various effects, but upon consideration it seemed that the means already in our hands were sufficient for almost every case likely to be met with. I may afterwards refer to one or two of these variations, but let us see first what may be done with the standard developer before described.

By giving a normal exposure, after a slight damping of the paper, and developing without any "ageing," the maximum amount of vigor will be attained. By an "ageing" of the paper for a few hours before development an increase in half tone will be secured, and by a further "ageing" still more half tone and a tendency to flatness.

Again, should prints have been, by accident, under-exposed, "ageing" will bring out half tone; and, if exposure has been rather overdone, the prints may be dried as soon as they come out of the frames and developed in this state, the development being carried only sufficiently far to secure the right effect.

But I think the "ageing" method should be used with a certain amount of caution, for, if carried to excess, it will tend to muddiness in the prints.

In order to slow the developing action, the addition of fifty per cent. of water may be made to the standard developer, and by adding an amount of a saturated solution of potassic chloride equal to one half of the bulk of the P solution present in the developer, the developer will be rendered still more slow. The developer thus diluted and restrained by KCl is useful for tentative work and for prints (not of strong subjects) which have been over-exposed.

I may here mention that chlorides appear to act much better than any oxidizing agents for the purpose of restraining development, and for theoretical reasons this might be expected.

The development of this paper may be looked upon as affording variations similar in effect to those obtained in the development of dry plates, and as in the latter case the beginner would proceed by a long and devious course if he began by using, one after another, a dozen different developers before he had properly learnt the use of one, so in the working of the cold bath process his progress would be very slow and "mixed" if every day he tried something new. I therefore earnestly hope that those who begin this process will adhere to the formula laid down, until, at least, they are able both to expose and develop with accuracy.

Nothing has been said as to the keeping qualities of this paper, but, of course, no exact limits can be given, as so much depends upon the conditions under which the paper is stored. But when properly secured in a calcium tube, it certainly remains in good condition for at least as long as hot bath paper, but, probably, for a longer period. Some paper, so stored for seven months, gave prints as good as when fresh. Prudent workers will, not stock more than sufficient for, say, two months' work.

The exposure to light is less than that required for hot bath paper—perhaps one-third less; when compared with albuminized paper, in a weak or feeble light, the advantage is enormous.

I will now state what appear to me to be the most important features and advantages of this process. They are:

1. The pigment of which the image is formed is derived wholly from the developer, and, in consequence, the utmost transparency possible on a matt surface is attained.

2. The operator has great power to modify his results; his success depends upon his skill, and he is not bound to an inflexible and fated result by the want of plasticity in his materials.

In conclusion, I may be allowed to give an opinion as to the value of this method, and perhaps the strongest statement I can make is, that after working many years at the platinotype process, always with an ideal before me, I feel that my aims are at last as far satisfied as is permitted to those working in a world where all things are conditioned.

W. WILLIS.

PHOTOGRAPHIC SOCIETIES.

BOSTON CAMERA CLUB.—At a meeting of the Club held at the rooms, 50 Bromfield street, December 3d, two resignations were accepted and four new members elected. Nominations for officers for 1889 were made, and will be acted upon at the annual meeting in January.

The Club voted to purchase an additional lantern, which, with that already owned by the Club, gives it a fine equipment of a double-dissolving apparatus for club meetings, and a smaller but equally effective single lantern which members can use at their homes upon application.

Mr. Wm. G. Reed then made his report on "The Illustrated Description of Boston," the preparation of which has been in his charge, as a committee of one, since March last.

It consists of a text of about 15,000 words, requiring from one and one-quarter o one and one-half hours to read aloud. Each page of the text bears an album silver print pertinent to the same. Beneath each print is all technical information as to the make of both negative and positive, such as usually called for at exhibitions. The whole thus makes an illustrated book which individuals may, singly, peruse.

Lantern slides have, however, been made from all the negatives, so that any Society that borrows the set can give an entertainment to its friends by having some one read the text aloud, and, by the aid of a stereopticon, project the views upon a screen. Each slide is mounted with the Boston Camera Club Standard Mat, giving full information as to subject, maker, and process.

There are 65 prints and slides.

The text was written by Mr. Arthur Hooper Dodd, and the negatives and slides were made by numerous other members of the Club.

The whole has been prepared in duplicate. One set will be shipped to England to exchange for similar descriptions of English cities or scenery. The other set will

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The whole has been prepared in duplicate. One set will be shipped to England to exchange for similar descriptions of English cities or scenery. The other set will

remain in this country, to circulate among such amateur photographic societies as wish to borrow.

The Chicago and San Francisco Clubs are at work upon similar affairs, and the first interchange will, of course, be with them.

Any Societies desiring to examine and exhibit this "Illustrated Boston" may apply to E. F. Wilder, Secretary, of the Boston Camera Club, 50 Bromfield street, Boston, Massachusetts, and as soon as San Francisco is through with it, it will be started on a circuit among the applicants.

The last meeting of the Boston Camera Club, December 31, 1888, was devoted to lantern slides, Messrs. Briggs and Wilder being the exhibitors. Their slides were much admired by those present.

An informal competitive exhibition will be opened on the night of the annual meeting, January 7th, and the prize (a copy of Burnett's Art Essays, offered by the members of the Club) will be awarded by vote of those present.

E. F. WILDER, *Secretary.*

THE Photographic Section of the Rochester Academy of Science, has ceased to exist, and a new organization has been formed which bids fair to be far more successful than the old. Its first annual meeting was held at the Society rooms, East Main street, where the members have a good room for meeting, and a most thoroughly equipped dark room. A constitution and by-laws were adopted and officers for the year elected. The new organization will be known as the Camera Club of Rochester, N. Y. It commences with a membership of 62, which includes all the members of the late Photographic Society of the Academy. The former president of the Section, Mr. G. Hanmer Croughton, was unanimously elected president of the new Club, the other officers being: first vice-president, Mr. Rafter; second vice-president, Mr. Lowe; Secretary, Mr. Peter Mawdsley; Treasurer, Mr. Streeter.

PHOTOGRAPHIC SECTION OF THE ROCHESTER ACADEMY OF SCIENCE.—Regular meeting held December 4th, nineteen members and a large number of visitors present.

President Croughton in the chair. The Room Committee gave their report which was accepted, and after some discussion was laid on the table. Resolutions on the death of Vice-President Hagreen were read, and, on motion, accepted, and a page in the minutes ordered to be set aside to his memory. The President read an interesting paper on "Flash-light Photography," written by Mr. John Bartlett, of Philadelphia; and also exhibited some very fine flash-light pictures made by Mr. Bartlett.

A demonstration of the flash-light was next given, which proved a success. The Blitz-Pulver compound was used to produce the flash.

A vote of thanks was given Mr. Bartlett for his interesting paper and pictures, and McCollin & Co., of Philadelphia, for the Blitz-Pulver compound used. The meeting closed with a lantern exhibition of flash-light pictures.

JAMES STREETER, *Secretary.*

MISCELLANEOUS NOTES.

IN the *Philadelphia Photographer* for December 15, 1888, we are told (page 745) that Dr. H. W. Vogel, in directing the amateur as to the choice of a lens, advises him to select an aplanatic (anti-planetic, euryscopic) objective, whose focus shall be equal to the greatest dimension of the plate; he recommends, besides, the use of a wide-angle objective, whose focus should not exceed the half length of the plate.

Surely the learned doctor does not mean to assert that an aplanatic, anti-planetic and an euryscopic objective are one and the same thing, as the translation (as the clipping doubtlessly is) would indicate.

Perhaps the little instrument described upon the opposite page of the same journal, called a self-retaining tongue depressor, and for which no photographic use at all is suggested, might have been made applicable, in the present instance, in preventing this confusion of tongues, or terms.

EFFECTS OF STAINING ON DRY PLATES.—At the meeting of the Physical Society of Berlin, Nov. 2, Professor Kunst exhibited a number of photographs of spectra taken upon dry plates which had been stained with various substances.

The plates stained with chlorophyl gave especially interesting results. The spectra obtained upon them consisted of a bright strip ending near F, followed by a dark portion intercepted by an extremely bright line, at the spot where the absorption band of chlorophyl is present in the red. Plates stained with eosine similarly showed a bright strip corresponding to the absorption band of this substance in the yellow, whose brightness was much greater than that of the rest of the spectrum. These experiments showed that the rays of light which are absorbed by the above coloring matter, exert an extremely active chemical influence on the plate.

Experiments made with a view to determining whether absorption of light has a similar effect on fluorescence yielded negative results.

It still remains to investigate whether the maximum brightness of the spectrum, photographed on a plate stained with chlorophyl, corresponds exactly with the absorption band of this substance, taking into account the influence of the solvent used for solution of the chlorophyl on the position of the absorption band of alum.

NATURE.

IN MEMORIAM.—EDWARD ANTHONY.

No. 591 BROADWAY, NEW YORK,
December 14, 1888.

It is with the profoundest regret that we announce the death of our honored and beloved President,

EDWARD ANTHONY,

on the 14th of December, 1888.

His noble Christian life, strict integrity and gentle disposition are so well known that we can add nothing to the simple announcement of our loss.

Very truly yours,

E. AND H. T. ANTHONY & CO.

ON Thursday, January 3, 1889, died at his residence, in Philadelphia, David U. Morgan, a man whose genial disposition, coupled with his goodness of heart, makes many pleasant memories cluster about his name.

A nobility of character and honesty of purpose ever characterized his daily walks, not only with those with whom he was associated in business relations, but with his family and with all with whom he came in contact.

Mr. Morgan began business as a manufacturer of albumen paper a quarter of a century ago, and from a very small beginning rapidly extended his borders until the production reached nearly two thousand two hundred reams of paper a year.

His death, from pneumonia, was very sudden, and a shock to his family and numerous friends, who so well knew and appreciated his sterling qualities.

LITERARY AND BUSINESS NOTES.

TRAITÉ PRATIQUE D'IMPRESSION PHOTOGRAPHIQUE SUR PAPIER ALBUMINE. Par G. Klary. Paris: Gauthier, Villars et Fils.

This little work is a clear, concise explanation of the various manipulations necessary for producing photographs upon albumen paper.

The personal experience of the writer is brought directly to bear upon the subject, and the reader may rest assured that the instructions and formulæ given are not from hearsay, but the result of practical knowledge of the various difficulties of this department of photographic printing, which, despite the march of improvement, has had no successful rival.

The writer very justly remarks that usually great stress is laid upon the importance of negative making, while the production of the print, for which alone the negative has been made, is looked upon as a secondary consideration. Principals are very particular as to the qualifications of the operator, but imagine that anyone may be entrusted with the making of the print.

The enterprising and progressive printer will find this little work of M. Klary a most excellent treatise, wherefrom he may gain lessons which shall elevate himself as well as his profession.

TRAITÉ PRATIQUE DE LA PEINTURE DES EPREUVES PHOTOGRAPHIQUES. By the same author, and published by the same firm.

Artists and amateurs who work upon photographic papers, either in oil or water-color, will find this work of M. Klary's a most excellent compendium.

The instructions are given in the author's characteristic style, and the student will find many valuable hints for the rendering of the draperies and backgrounds with relation to the subjects, as well as much that will tend to improve or cultivate a taste for harmony of color.

PROCÉDES PHOTOGRAPHIQUES AUX COULEURS D'ANILINE. Par Geymet. Paris: Gauthier, Villars et Fils.

This is a most excellent work on the application of the beautiful aniline dyes for the purpose of coloring photographs upon ivory, celluloid, glass, plain and opal, and porcelain.

The popularity and commercial importance of the art of decoration has created a demand for proper instruction. Unfortunately, there are few trustworthy books to which one might direct the inquirer. It is, therefore, with great pleasure that we receive this much needed work upon the subject. We do not know of any book which so thoroughly enters into the details necessary for achieving success as the little pamphlet before us. The amateur, as well as the professional, will welcome it as a trusted guide in these difficult operations. It is evidently written by one who is thoroughly acquainted with all the minutiæ gained by practical work in the art.

TRAITÉ PRATIQUE DE PHOTOTYPIE. By the same author. New edition.

Phototype printing is another branch of the art upon which little has been communicated by practical workers; so that the present work is bound to meet with readers who are anxious to

gain some knowledge of the particulars of the process.

The object of PROCÉDES DE REPRODUCTION DES DESSINS, by R. Colson, is to furnish methods for reproducing designs, etc., upon paper by the agency of light, without having recourse to the press. The work will be found very interesting to those who desire to become familiar with quick, cheap and good methods of reproduction.

L'HYDROQUINONE. Par Geo. Balagny.

Development with hydroquinone is rapidly growing in favor with amateur and professional. M. Balagny, one of the most zealous workers in introducing the new method, has embodied his views in a little treatise, published by Gauthier, Villars et Fils, Paris.

Photographers will welcome this embodiment of the views of so thorough and practical a worker as the author.

The ever-welcome *British Journal Almanac* has reached us, laden with its cargo of good things from across the sea. It continues to steer its course right through to universal popularity, notwithstanding the numerous photographic crafts afloat.

Photography is the title of a new weekly journal, published in London, under the editorial management of Henry Sturmey. It is ably conducted, and contains much interesting matter of value to the amateur, professional and commercial photographer.

The Philadelphia Photographer, which for a quarter of a century has been so ably and successfully edited and published by Dr. E. L. Wilson, will cast its slough and appear in a new form, under the title of *Wilson's Photographic Magazine*. We hope it will enjoy another quarter of a century of deserved popularity in its new guise, and that the editor will be gratified with a continuation of the pleasant relations he has established between himself and his patrons.

The Photographic Times appears for 1889 in a new cover, which greatly improves its appearance. It will continue under the same editorial management, but will be illustrated each week with a full-page picture.

The editor of the *St. Louis Photographer* has very kindly sent us a beautifully bound copy of her excellent magazine. We are very grateful for this kind remembrance, especially as it enables us to have in convenient form a means of referring to the many excellent papers which have been contributed to this publication during the past year.

MR. GEO. HANMER CROUGHTON, who has been in sole charge of the furnishing department of the Eastman Dry Plate Co., of Rochester, and who is widely known, not only for his skill as an artist, but also for high abilities as a photographer, has, by reason of the extraordinary demand for his work, set up an establishment of his own at Rochester, N. Y., where he is equipped with everything necessary for the enlarging and finishing of Bromide Pictures, and work upon other permanent basis.

Mr. Croughton's experience as an artist and photographer extends through more than twenty-five years, during which time he has worked upon every kind of print,—solar, platinum, carbon and bromide.

He was the first to show that the Bromide paper, introduced by the Eastman Co., and which has become so popular, could be worked upon for artistic effects. We remember well the admiring crowds which gathered around him at the Chicago Convention in 1887, to see the facility with which he produced such excellent results, he having been engaged especially by the Eastman Co. to demonstrate the work.

His long experience, coupled with his technical and artistic skill, have gained him a reputation which is sure to make his venture a success.

JANUARY BARGAIN LIST.

Accessories:

1—Perfect Camera Stand for 8x10 . . . . . 8 00
1—Iron Centre Camera Stand, . 3 00
1—14-in Eureka Burnisher . . 16 00
1—20-in Entrekin Eureka Burnisher 30 00
1—Seavey Swiss Cottage Accessory 12 00
1—8x10 Exterior Ground, good condition, ... 10 00
2—Spencer Head-rests 11 00
British Journal Almanacs for 1878 20
Photo Mosaics for 1883, ... 20
1—8x10 Plain painted ground . 3 00
1—Knickerbocker stand, with 14x17 top 9 00
1—8x10 Osborne's interior background, new, light left . . . 20 00
1—4x8 Osborne's side slip . . . 7 50
Pearl leads, the best retouching point in the market, each . 15
8x10 Job Lot Picture frames; write for particulars.

Desiring to reduce our stock, we will sell for a short time.

	PER DOZ.
5x8 Woodbury Dry Plates . . .	80
5x7 " " . . .	77
4¼x6½ " " . . .	65
6½x8½ Triumph " . . .	85
5x7 " " . . .	55
4¼x6½ " " . . .	45
5x8 Neidhardt " . . .	65
4x5 Bridle " . . .	35

1—8x10 Hough's Exterior ground, good as new, light left of sitter 9 00
1—8x10 Hough's Exterior ground, light right 8 00
1—Hough's Oak Stump 7 50
1—Osborne's No. 71 Rock Accessory 9 00
1—Osborne's Bridge Accessory . 8 00
1—Osborne's Gate Combination Accessory, new 18 00
1—5x8 Negative Box 50
1—Pneumatic Drop Shutter, fitted for no. 2 Darlot lens 2 00
24—5x8 Printing Frames, each . 30
6—4¼x6½ Printing Frames, each 25
3—3¼x4¼ Printing Frames, each 20
6—6½x8½ Printing Frames, @ 40
1—Scovill Extension Tripod and canvas case, ... 2 50

Camera Boxes:

1—5x8 Blair View Camera, single swing 17 00
1—Climax Outfit, including chemicals, complete . . . . . .
1—17x20 D. S. Portrait Camera, good condition 40 00
1—4¼x6½ Novalette Camera . 16 00
1—8x10 American Optical Co.'s Royal Camera, double swing and carriage movement, . 25 00
1—8x10 Ferrotype Box, Carriage movement and glass cornered holder and 4x4 lens 30 00
1—5x8 Tourist Outfit, including 5x8 Tourist Camera Box, 2 Daisy Plate Holders, 1 Extension Tripod, and 1 Canvas Carrying Case, very little used. Price, new, $40.50, will sell for 30 00
1—10x12 Cone View Camera, Double Swing, new 52 80
1—4x5 Flammang revolving back Camera, new, ... 25 00
1—4¼x5½ No. 202 A. Scovill Outfit 20 50
1—6½x8½ View Camera and Lens 12 00
1—5x8 Wet Plate Stereo Camera, 3 holders, case and tripod . 25 00
1—6½x8½ American Optical Co. first qual. View Camera . . 23 00
1—4¼x5½ Ex. qual. Portrait Camera 17 50
1—5x8 American Optical Co. Stereo Camera 25 00
1—5x8 Scovill Camera, Lens, holder, tripod and case . . 8 00
1—5x8 Blair Compact Camera, good as new 35 00
4—5x8 Feather Weight Holders, each 75
1—8x10 American Optical Co.'s Camera, with carriage movement, fitted with 4—¼ tubes and 2 Bonanza Holders, . . . 28 00

Lenses:

1—1 Darlot Rapid Hem. Lens, for 4x5 views 12 00
1—2 Darlot Rapid Hem. Lens, for 5x8 views 18 00

1—8x10 Beck Lens, good as new, fitted with Prosch Shutter . 60 00
1—set ¼ Darlot Tubes 13 00
1—set ⅛ Darlot Tubes 18 00
1—18x22 Zentmayer Lens . . . 40 00
1—4–4 Holmes, Booth & Hayden Portrait Lens 25 00
1—½ size Voigtlander Portrait Lens 10 00
1—5x8 Waterbury Lens 2 00
1—Focusing Glass 75
1—11x14 Pantagraph Lens, new 38 00
1—½ size Voigtlander Lens . . 15 00
1—4x5 Dallmeyer View Lens . . 12 00
1—⅓ size L. W. Krantz Portrait Lens 12 50
1—⅓ size C.C. Harrison Portrait Lens 8 00
1—½ size Darlot quick acting Portrait Lens, central stops . 18 00
1—No. 6, 17x20 Darlot wide-angle Hemispherical Lens 38 00
1—8x10 E. A. View Lens . . . 5 00
1—Ross View Lens 5 00
1—H. Fitz Double View Lens, revolving stops 8 00
1—8x10 Voigtlander Portrait Lens 80 50
1—4–4 Dallmeyer Group Lens . 50 00
1—4–4 Walzl Portrait Lens . . 20 00
1—¼ size portrait lens 3 00
1—4–4 M. Hill & Co. Portrait Lens 20 00
1—4–4 Morrison Peerless Portrait Lens and Lightning Shutter 35 00
1—Matched Pair Morrison wide-angle view Lenses fitted with Hoover Shutter 45 00
1—4 D Dallmeyer 8x10 Portrait Lens 75 00
1—¼ size Harrison Portrait Lens 5 00
1—¼ size E. A. Portrait Lens . . 5 00

We have just received an importation of Orthoscope Lenses, which completes our stock in the following sizes:

4x5 Rapid Rectilinear, ... $10 00
5x8 " " 15 00
8x10 " " 20 00
4x5 wide angle," 10 00
5x8 " " " 15 00

Light, compact, and quick acting.

Every lens guaranteed. Sent on 10 days' trial on receipt of price.

THOS. H. McCOLLIN & Co.
635 Arch Street, Phila.

ROLFE'S Retouching Compound, the best preparation for preparing negatives for the work of retouching. Price, 40 cents per bottle. For sale by
THOS. H. McCOLLIN & Co.,
635 Arch Street,
Philadelphia.

WANTED—A 5x7 Dallmeyer or Ross Rectilinear Lens. Will exchange for No. 1 Euroscope.
THOS. H. McCOLLIN & CO.,
635 Arch St., Phila.

FOR SALE—Photograph Gallery near Philadelphia, established for one year, or will take partner with some capital to push business. Address P., care of Thos. H. McCollin & Co., 635 Arch St., Phila.

PURPLE CANE, NEB., Sept. 14th, 1888.
MR. CARBUTT,

DEAR SIR.—I have perfect success with your "Eclipse 27 plates" with "Blitz-Pulver" and your "Hydrochinone." I can ask nothing better. I shall use your plates altogether in future. I have tried three other makes, but had trouble with them all. Respectfully,
S. RUFUS MASON.

Draughtsmen's Sensitive Paper,

BLUE PRINT PROCESS.

Unrivaled quality. Specially prepared for reproduction of Plans, Drawings, Architectural Designs, etc. Send for Price List.

Thos. H. McCollin & Co.

G. HANMER CROUGHTON,

ARTIST,

Enlarging and Finishing for the Trade.

16 STATE ST., ROCHESTER, N. Y.

BROMIDES, PLATINOTYPES, CARBONS.

The object of my engagement with the Eastman Co. having been accomplished, viz.: the demonstration of the fact that artistic work could be executed with greater facility upon Bromide Paper than upon any other kind of paper used for enlarging purposes, that engagement has terminated, and I have commenced business on my own account as above, and solicit a trial order. Send for price list and circulars.

Important Announcement

TO ALL PARTIES USING PHOTOGRAPHIC PLAIN SALTED PAPERS.

That hereafter I shall prepare both Matt and Leatherized Salted Papers by an entirely new process, for keeping its primary color for several days after its being sensitized (it being excluded from light and sulphur fumes in the meantime, and the way to do this is to be placed in tin tubes made near air-tight). Among its many qualities are Toughness, a superior matt surface, having a splendid tooth for all kinds of artists' work.

Float on any ordinary silver bath, and fume from 20 to 30 minutes, or swab with ammonia nitrate of silver, made thus: to 480 grains of silver add 12 ounces of water; when dissolved, pour off one-third, to the remaining two-thirds add strong ammonia, which forms a precipitate, and still add until all the precipitate is re-dissolved, then add the remaining one-third to this, add sufficient C. P. nitric acid, drop by drop, until the residue is nearly taken up; this needs no fuming, and when dry it is ready for use, and, in my judgment, makes the best prints. If bath discolors, add a few drops of table salt solution, and sun well.

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